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Predicting Bullying Among High School Students Using Individual and School Factors: Analysis of a National Survey

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PREDICTING BULLYING AMONG HIGH SCHOOL STUDENTS USING INDIVIDUAL AND SCHOOL FACTORS: ANALYSIS OF A NATIONAL SURVEY

by

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ABSTRACT

Predicting Bullying Among Male High School Students Using Individual and School Factors: Analysis of a National Survey

by

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Being bullied has been recognized as a problem within the U.S. school systems. Individuals who have been bullied physically, verbally, relationally, or electronically typically suffer from mental health problems as a result. As it has been shown that males are more at risk for being bullied, it is important to understand what variables can predict males being bullied in order to design appropriate preventions and interventions to curb bullying in the schools. Four forms of school bullying behaviors among U.S. adolescent males and their association with type of bullying, school environment, and school performance and engagement variables were examined.

Data were examined from the National Crime Victimization Survey School Crime Supplement. A sample of 1,636 males ages 14 to 18 was used from the survey. A series of logistic regression analyses were performed for each type of bullying (physical, verbal, relational, and cyber) and school environment (presence of gangs, guns, graffiti, drugs,

and number of school safety measures in place) and school performance and engagement predictors (grades, extracurricular activity engagement, truancy, and number of fights). Linear regression analyses were also used to look at all the predictor variables and the frequency of each type of bullying.

Results: The R^2 values for the logistic regression analyses were quite small. However, trends could be observed from the odds ratios showing that fighting, drug availability, and graffiti were predictive of all four forms of bullying. The linear regression analyses also produced small R^2 values. Effect plots were created to identify which significant variables had a greater effect on the frequency of being bullied.

Conclusion: Schools should focus on removing graffiti and drugs from the schools. Prevention work should be used to help students find alternative ways to deal with problems other than resorting to fighting. Problems with reliability and validity of the survey are also discussed.

(90 pages)

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Chad M. Bohn

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CHAPTER I

INTRODUCTION

In the 2006-2007 school year, there were 55 violent elementary school deaths in the U.S. (Dinkes, Cataldi, Kena, & Baum, 2008). According to the Institute of Education Sciences (IES) and Bureau of Justice Statistics (BJS), violent crimes at school (not including death) affect 29 of every 1,000 students (Dinkes et al., 2008). Indeed, approximately 10% of students have been hurt or threatened by a weapon—a rate that has been stable for more than a decade (Dinkes et al., 2008). In 2007, 78% of all U.S. public schools reported one or more incidents of violent crime, 46% had one or more thefts, and 68% reported other types of crime (Dinkes et al., 2008). Ten percent of students ages 12-18 were targets of hate-related words (e.g., words related to appearance or handicap, sexual orientation, ethnicity, religion, etc.) and 35% of students had seen hate-related graffiti at school (Dinkes et al., 2008). Thirty-two percent of this age group also reported that they had been bullied at school, 7% avoided activities and locations in the school for fear of being attacked, and 5% were afraid of being attacked or harmed while at school (Dinkes et al., 2008).

These statistics demonstrate some of the sobering experiences faced by children in the school system in the US. To understand the picture more completely, we need to fully comprehend the complexity of victimization, from the risk factors that may lead to being a victim to the problem characteristics that may lead one to become a perpetrator. Victimization was defined by Finkelhor and Kendall-Tackett (1997) as “harms that occur to individuals because of other human actors behaving in ways that violate the social

norms" (p. 446). These "harms" are believed to be physical and/or psychological in nature. One of the most common forms of victimization found in schools is bullying. There have been a number of definitions of bullying presented in the literature. For example, Olweus (1997) wrote that one is "being bullied or victimized when he or she is exposed, repeatedly and over time, to negative actions on the part of one or more other students" (p. 496). Moreover, Batsche and Knoff (1994) defined bullying as

> … a form of aggression in which one or more students physically and/or psychologically (and more recently, sexually) harass another student repeatedly over a period of time. Typically, the action is unprovoked and the bully is perceived to be stronger than the victim. (p. 34)

Researchers examining bullying have identified some key factors that correlate with becoming a victim of bullying, including: gender, being younger in age (i.e., higher risk in elementary or middle school versus high school), location of residence (i.e., school or residence is located in a low SES high crime area; Alvarez & Bachman, 1997), race or ethnicity (i.e., minority groups, African American, Latino; Caughy, O'Campo, & Muntaner, 2004), and visible signs of disability (Farrington, 1993).

There are a number of critical factors that may be present in school that are linked to the occurrence of bullying. They include: school climate, peer status and inclusion, substance abuse, gang presence, weapons, and graffiti. These factors are often complex but they add to our understanding of the impact on the school learning environment, along with the individual struggles of both the bully, and the victim of the bully's advances.

In addition to the factors listed above, those who are bullied often experience difficulties or negative outcomes that are associated with those factors. Victims of

bullying often report experiencing anxiety, depression, unhappiness, and emotional difficulties (Craig, Peters, & Konarski, 1998). Many have low self-esteem, negative views of themselves (Farrington, 1993), poor relationships with adults and peers (Champion 1997; Goldstein, Young, & Boyd, 2008), or have a diminished sense of school belonging (Holt & Espelage, 2003; Lindstrom, 2001). Other problems associated with being bullied include a sense of not being safe at school (Addington, 2003), and poor grades (Baker & Mednick, 1990; Brockenbrough, Cornell, & Loper, 2002; Furlong & Chung, 1995; Murdock & Bolch, 2005). Ultimately, bullying can impact an individual's ability to cope with stress in a healthy way. Some children who are adversely impacted by bullying, or who turn to bullying to gain a sense of control over their environment, may turn to other forms of coping such as risky or maladaptive behaviors.

The purpose of this study was to examine, through utilization of a nationally representative sample of U.S. high school male adolescents, the degree to which school performance and engagement characteristics (e.g., extracurricular involvement, grades, fighting, truancy) and perceived school environment characteristics (e.g., school safety, drug availability, gang presence) predict whether male adolescents will be victims of school-based and/or cyber bullying. If the characteristics that either make certain adolescents victims of bullying, or protect them from bullying, can be better understood, it is possible that bullying and/or victimization intervention strategies can be developed in schools to specifically prevent negative outcomes (i.e., depression, suicide, aggressive retaliation) from occurring.

CHAPTER II

LITERATURE REVIEW

Over time, the operational definition of bullying has evolved. In his research examining bullying in an all-boys school, Olweus (1978) defined a bully as "a boy who frequently oppresses or harasses somebody else" (p. 190). He also noted that the bully may target boys and girls with physical or mental harassment. A more recent definition provided by Olweus (1997), subjectively identified a victim of bullying as a student who is "being bullied or victimized when he or she is exposed, repeatedly and over time, to negative actions on the part of one or more other students" (p. 496). Definitions have become more varied not just among researchers but also in state and national governments, regarding an appropriate definition of bullying. Although a final definition has not been explicitly identified, there are several facets of the definition that have emerged. Researchers do regularly agree that bullying has three main components: (a) intentionality, (b) an imbalance of power, and (c) repetition. According to the U.S. Department of Education (1998), bullying is defined as

> intentional, repeated harmful acts, words, or other behavior, such as name-calling, threatening and/or shunning, committed by one or more children against another. The victim does not intentionally provoke these negative acts, and for such acts to be defined as bullying, an imbalance in real or perceived power must exist between the bully and the victim. Bullying can be physical, verbal, emotional, or sexual in nature. (p. 1)

Despite the fact that the federal government has a working definition of bullying, individual states have not recognized all the components of this definition (Furlong, Morrison, & Greif, 2003). Many states do not define bullying in any form beyond using

the word itself (Furlong et al., 2003). For example some states (e.g., Louisiana, New Jersey, Oklahoma, Oregon, Washington, West Virginia) call bullying "peer harassment," "peer intimidation," or "hate crimes"(Furlong et al., 2003; Limber & Small, 2003). These definitions were not consistent with current research and seemed to do very little to help add clarity to the problem. Lack of an accurate label regarding what constitutes bullying can make useful research and intervention development challenging (Limber & Small, 2003).

Types and Forms of Bullying

The two most common forms of bullying examined by researchers are physical and verbal bullying. Physical bullying involves physical attacks on the victim, including hitting, kicking, pushing, shoving, spitting, throwing object(s), or anything which does physical harm to the individual or their belongings (Olweus, 2001). Verbal bullying commonly involves verbal taunts directed at the victim. These can be actions such as insults, taunting, teasing, and name calling (Olweus, 2001; O'Moore & Kirkham, 2001).

Although physical and verbal bullying are often identified as two different forms of bullying, these forms of harassment tend to co-occur (Raskauskas & Stoltz, 2007). For this reason, physical and verbal bullying can be placed into a category called direct bulling. Direct bullying, or overt type bullying, includes physical and verbal aggression repeatedly focused on a single target (Peskin, Tortolero, & Markham, 2006). For instance, research performed by Orpinas, Home, and Staniazewaki (2003) found that close to 60% of students reported being victims of direct bullying.

The other type of bullying identified by researchers is indirect bullying. Indirect bullying, also known as relational or social aggression, includes social exclusion or attempts to isolate a target from social participation, spreading gossip, refusing to socialize with the victim or excluding them from activities, criticizing physical appearance or characteristics of the victim (Olweus, 2001; O'Moore & Kirkham, 2001; Raskauskas & Stoltz, 2007). In addition, indirect bullying can include such things as vicarious bullying (witnessing attacks) or bystander effects and seeing the display of hate words (hate-based graffiti). Adding to the problem of bullying, electronic bullying has taken direct and indirect bullying outside the school yard and into the safety of the individual's home.

Electronic bullying "is unique from traditional bullying because aggressors are removed from their victims and from the impact of their actions" (Raskauskas & Stoltz, 2007, p. 566). However, the notion of an actual or perceived power imbalance is difficult to identify, as many victims of electronic bullying may never know the identity of the bully, and the bully may not fit the traditional definition. Individuals can be targets of online harassment through postings to blogs, message boards, or social networking sites such as Facebook or Twitter. Harassment may also occur through email, texting (SMS), or instant messaging. Raskauskas and Stoltz (2007) found that 48.8% of middle and high school students interviewed said that they were a victim of electronic attacks. This implies that bullying has moved beyond the school grounds, making children feel unsafe perhaps even in their own homes. Despite the different types and forms of bullying, they can have a lasting impact on the well-being of the individual.

Predictors of Being Bullied

Predictors of experiencing bullying can be categorized into groups such as individual predictors and environmental predictors. Individual type predictors can be variables such as internalized behaviors (e.g., depression, stress, etc.), externalized behaviors (e.g., aggression/fighting, defiance, etc.), physical characteristics, school performance and engagement (e.g., grades, school involvement, truancy). Environmental predictors can be variables such as family and social life, socioeconomic status (SES), and school environment.

School Environment Predictors

As bullying tends to happen at school, the school environment is an important context to examine in bullying research. There are also a variety of environmental predictors of victimization, including social engagement, SES, school neighborhood, and school security and climate.

Socioeconomic status and school neighborhood. Location of the school and SES of the school and the surrounding neighborhood may increase the likelihood that a student will experience bullying (Khoury-Kassabri, Benbenishty, Astor, & Zeira, 2004). Lindstrom (2001), for example, reported from findings on studies done among Swedish middle school and high school students that schools where the family and community resources were low, violence tended to be high.

School security and climate. Violent incidents in school are widely reported in both local and national media. As a result, measures have been increased to improve

school security including the addition of security cameras, security guards, name/photo badges, locker checks, mandatory visitor sign-ins, locked doors during the day, metal detectors, and staff or adults in the hallway. For instance, in a qualitative study in the UK, researchers administered questionnaires to 29 males and 32 females and held two focus groups with ninth-grade adolescents on their attitudes toward recently enacted school safety measures. The most noticeably apparent security measure was the presence of security cameras. Although no statistics were provided, these researchers noted that, qualitatively, females reportedly felt safer and felt the cameras were necessary to stop bullying and catch those who litter (Noaks & Noaks, 2000). These students thought the cameras should be present in other places within the building as well. On the other hand, males did not feel the cameras were necessary and believed the money should be spent on education and other things (Noaks & Noaks, 2000).

Results of a survey of 6,189 students in 5th through 12th grade conducted by Furlong and Chung (1995) showed that students who reported high levels of bully experiences had significantly lower feelings of personal safety than nonvictims, had less feelings of belonging to the school, and had less trust in school relationships. Similarly, Astor, Benbenishty, Zeira, and Vinokur (2002) found that school climate (i.e., teacher support, policies, and the maintenance of the school) greatly contributes to overall high school students' perceptions of their school and their risk of being bullied at school. Fitzpatrick (1999) conducted a study to examine student perceptions of school climate who report having bullied one or more students. Those students in this study who reported a negative perception of the school environment and its safety measures had

greater odds of being victimized. Fitzpatrick also found that perceived school climate (a climate that is conducive to learning either in the classroom or in the school as a whole), and those involved in bullying (the bully or the victim) are likely to report having negative perceptions of the school and classroom.

Unnever and Cornell (2004) further explored the relationship of school-climate and bully effects from the perception of the victim or individual being bullied. Unnever and Cornell found that students were less likely to report school bullying if they perceived their school climate as being tolerant of bullying. This finding may suggest that individuals who are bullied or victimized may not feel a connection with their school. If the connection is missing, why would the individual report bullying to a teacher or administrator if they feel that little would be done to stop it?

Just as perception of school climate and safety measures impact students, so does the perception of school rules. A study by Ma (2001) examined school climate in the presence of school rules and disruptive behavior by other students. Ma found that having school rules (not specifying the type or number) and schools having less disruptive behavior helped victims and discouraged bullying. In a separate study by Mayer and Leone (1999), school rules and a knowledge of the rules led to decreased disorder within high schools and middle schools. Disorder, as defined for this study, included repeated attacks (bullying) as well as isolated attacks, violence against students and teachers, and violence and disruption in the school. The Mayer and Leone study also found that the presence of physical safety measures (e.g., metal detectors, locked doors, etc.) and personnel-based actions (security guards, adults in the hall, etc.) led to increased disorder.

This is a troubling finding to which the author did not offer an explanation. It may be possible, that the increase of physical and personnel-based safety measures may not be a cause of disorder but a consequence of increased disorder at the school.

Drugs. The availability of drugs—and even the perception of the availability of drugs—is associated with negative outcomes such as violent victimization in the presence of hard drugs (e.g., illegal drugs) and nonviolent victimization in the presence of soft drugs (e.g., alcohol and cigarettes; Van Dorn, 2004). Furlong, Casas, Corral, Chung, and Bates (1997) examined youth perceptions of drugs at schools with 4,179 seventh-, ninth-, and eleventh-grade students through the California Drug Use Survey. Furlong and associates found that the presence of drugs or alcohol on school campuses as reported by students was strongly correlated with being a victim and/or an aggressor at school. Van Dorn (2004), using data from the National Crime Victimization Survey School Crime Supplement also found that students ages 12 to 18 were more likely to report being victims of violent actions when there was a gang presence and when hard drugs were available at the school. Van Dorn also found that just the presence of drugs, hard or soft, was related to student reports of victimization. Another study using data from the 1995 Youth Risk Behavior Survey found that there was an increased presence of violence (e.g., physical fights, property damaged or stolen, being threatened or injured) at school when drugs were reported to be present, even if the student reportedly did not use drugs (Lowry et al., 1999). Research by Windle (1994) identified a moderate correlation ($r = .38$, $p < .001$) between drug use and victimization even when controlling for school-level predictors such as school size, whether the school was public or private, and the mean

SES of the student body. Given these findings, it seems rather clear that the presence of drugs encourages victimization, and conversely, victimization is encouraged by the presence of drugs (especially in the presence of other negative influences such as gangs). Overall, drug presence has a large impact on determining if a student will be victimized at school. In fact, students report feeling safest at school and in their community, when there is less substance abuse (Kitsantas, Ware, & Martinez-Arias, 2004).

Gangs. As noted above, Van Dorn (2004) showed that gang presence was significantly associated with violent school-based victimization. This finding is also supported in research by Schreck, Miller, and Gibson (2003), who examined the influence of violent acts in communities and schools where there were a high proportion of students with delinquent characteristics and criminal associates. When high percentages of students with these characteristics were present, a higher likelihood of student reporting of victimization occurred at the school. In several studies, delinquency has also been found to be related with gang membership such that a high presence of gangs is associated with high levels of delinquent activity and school-based victimization. Often, if there is a gang presence, there is also an increased reported fear of victimization (Lane & Meeker, 2003; Zhang, Welte, & Wieczorek, 1999). The fear induced by gangs at school can give students the impression that the school is not a safe place. From these findings, it becomes rather clear that gangs can be a predictor of both fear as well as actual victimization.

Graffiti. A few studies have examined the effects that graffiti (particularly hate-based graffiti) has on students who may view the images and text at their school

(Fitzpatrick, 1999; Van Dorn, 2004). Van Dorn found that the presence of hate words displayed somewhere on school grounds, was significantly associated with school-based victimization. Fitzpatrick found that school vandalism and graffiti is correlated with an increased presence of school-based victimization. Although, given this finding, it is unclear if the graffiti or school vandalism was a cause or a consequence of school-based victimization. However, the results suggest the presence of graffiti is an indicator that school-based victimization was occurring within the school.

Weapons. Research conducted by the U.S. Secret Service (2003) suggested that bullying played a key role in an individual's decision to bring a weapon to school and instigate an attack. Other research has indicated that those who are victims are more likely to say that it is "not wrong" to take a gun to school (Glew, Fan, Katon, & Rivara, 2008). However, weapon carrying does not necessarily mean an individual has been bullied. Other things may be occurring in the life of the individual as well as within the school.

Individual Predictors

Craig and colleagues (1998) found that children who are victimized may tend to be higher in internalizing behavior problems such as anxiety, depression, unhappiness, and emotional difficulties; these may be both a cause and a consequence of those who are bullied as these feelings are not uncommon with individuals who are persistently victimized.

As opposed to internalized problems there are also externalized behaviors that can cause difficulties for being bullied. Some of these externalized behaviors might be

aggression and compulsive or oppositional defiant problems. Looking at aggression, researchers have found that children who are overly aggressive (externalized behavior) may experience increased victimization (Cranham & Carroll, 2003; Furlong et al., 1997). In a similar manner children who are shy or withdrawn (internalized problems) may experience increased victimization as well (Craig et al., 1998; Fitzpatrick, 1999; Hanish & Guerra, 2000; Kokkinos & Panayiotou, 2004; Turner, Finkelhor, & Ormrod, 2006).

Physical characteristics. There are a few easily observed individual physical characteristics that may identify who become the target of a bully. Some of these physical characteristics are glasses, hair color, or obvious physical differences (e.g., such as speech disorders or obvious physical ailments). Farrington (1993), however, claimed that there was a slight difference between victims and other students and that the victim may have more signs of handicap (e.g., wearing glasses, physical limitations, speech difficulties) than other students. In more recent literature, obesity has been found to be a factor in determining if a child is bullied or not. Lumeng and colleagues (2010) found that children are more likely to be bullied because they are overweight regardless of other sociodemographic, social, or academic performance factors.

Gender. Research examining differences of bully effects between genders has resulted in some interesting findings. Studies examining gender differences among adult victims of violence have shown that females are more fearful of being victimized (Ferraro, 1996; Feyerherm & Hindelang, 1974) while males are more at risk for becoming actual victims (Baker & Mednick, 1990; Schafer, Huebner, & Bynum, 2006).

When investigating the prevalence of different types of bullying, Wang, Iannotti

and Nansel (2009) found that boys were more involved in physical and verbal bullying whereas girls were more often involved in relational aggression. Prior research suggests that there is a drop-off of physical bullying in high school among males and females (Dinkes, Kemp, & Baum, 2009). Alternatively, relational and verbal bullying remains relatively stable for females, but results are either not significant or inconclusive for males, when males and females are both included in a single analysis. This same study also noted that boys were more likely to be cyber bullies and girls to be cyber victims. Although, several studies have further examined relational aggression with female students, one aspect not noted in the literature is how prevalent relational aggression is among males. Given the clear gender difference by examining males by themselves, perhaps we can isolate what variables are specific to males in predicting victimization. Thus, additional research that examines the effects of different types of bullying with males is warranted.

Aggression and fighting. Individuals with aggressive attitudes (victim or nonvictims) were more likely to report carrying weapons to school, use alcohol or engage in physical fights at school (Brockenbrough et al., 2002). These findings indicate that those with aggressive attitudes are often a more vulnerable group for being either a victim or bully. However, lower levels of aggression and victimization is associated with greater level of student perceptions of a positive school climate and when they felt "a connection" to the school. Group memberships may be different depending on whether the individual is the victim or antagonist (Craig et al., 1998).

Researchers have found that individuals who were bullied were more likely to

engage in aggressive behavior or fighting when compared to subjects who were not bullied (Rudatsikria, Mataya, Siziya, & Muula, 2008). On the other hand, a victim who was classified as aggressive was at an increased risk for victimization (Hanish & Guerra, 2000).

Grades. Poor grades are commonly found to be correlated with individuals who have been bullied. Glew and colleagues (2008) found that the odds of being a victim were 10% lower for every 1 point increase in grade point average (e.g., 2.0 to 3.0). Peguero (2008) also noted similar results on standardized testing: As standardized test scored increased, their odds of reporting bullying victimization at school decreased. This is in support of previous findings that low academic achievement may be associated with an increased risk for being bullied or the fear of being bullied (Baker & Mednick, 1990; Brockenbrough et al., 2002; Furlong & Chung, 1995; Murdock & Bolch, 2005).

Truancy. When compared to nonvictims, Lindstrom (2001) reported that victims of bullying tended to regularly miss class or be truant. Truancy may be highly correlated with engagement in extracurricular activities as those students who are victimized have weaker involvement in school than those who are not victims (Lindstrom, 2001). Furthermore, research that does examine truancy looks at it in the context of some other factor. For example, comparing heterosexual high school youth to lesbian, gay, and bisexual (LGB) high school youth, Bontempo and D'Augelli (2002) found LGB youth were more likely to be truant than heterosexual youth due to a fear of victimization.

Extracurricular involvement. Using data from the Educational Longitudinal Survey of 2002, Peguero (2008) reported that students who are victimized at school often

do not participate in school activities and also found that students who participated in classroom related extracurricular activities or intramural sports were more likely to have experienced school-based victimization, more so than students who did not participate in extracurricular activities. Interscholastic athletes were less likely to report being bullied. While Peguero looked at individual extracurricular activities, other researchers examined student involvement in school and school based activities.

Lindstrom (2001) found that school-based violence tended to be higher among students with a low self-esteem and low school involvement. Lindstrom defined school involvement as a student being involved in any school activity and attending school.

Social engagement. We know that peer status and influence for example are important socializing factors in school. A few studies have indicated peer group status to be a good predictor of being bullied, for instance, students who are considered not as popular by their peers or have few friends are at greater risk of being victimized by others (Farrington, 1993). On the other hand, studies have shown that students who have someone to confide in, a friend or adult at school, may not be victimized (Cook, Williams, Guerra, Kim, & Sadek, 2010).

Improving on Prior Research

It is clear that there are multiple factors associated in researching bullying and understanding its complexity. One of the important things to pay attention to in bullying research is to make sure you have an adequate sample. There has been a lot of research conducted on bullying in a vast array of locations around the world. It was not until

recently that substantial research has been conducted within the US. Much of the research on bullying in the US involved small or localized samples. For example, a number of the studies examined for this literature review had samples drawn from individual states or specific towns and cities. A large sample from a national population can lend to more confidence in findings and conclusions as it should improve the generalizability of findings.

The type of sample is important in terms of generalizability as well as power to detect a phenomenon. Localized samples can really only be generalized to the population they were sampled from. National samples can be generalizable across a nation rather than being local or regional.

Another way to improve generalizability is to examine the bullying contextually. Many studies on bullying discussed in this literature review, examined bullying in settings other than high school, while still others examined a broad spectrum of students from elementary school through high school. This causes a discrepancy in generalizability of findings since many locations are made up of differing demographics. In a few of the studies, it can be argued that there was already a high prevalence of victimization happening within the school or community. Focusing on only schools or areas with a high concentration of bullying does not tell us about prevalence across the U.S. or across the diversity of individuals living within its borders.

A good example of a national sample study that utilized a large national and generalizable sample occurred in Israel. This survey was called the National School Violence Survey conducted by Khoury-Kassabri and colleagues (2004). The survey itself

was designed to be similar to the California School Climate Survey developed by Furlong (1996). The researchers used a sample of over 5,000 fourth- through sixth-grade students for the short version of the survey and about the same sample size for 7th- through 11th-grade students. The researchers found that students in 4th- through 6th-grade reported more victimization than students in 7th- through 11th-grade and that boys reported more problems with victimization than girls. They also found that a climate that was perceived as hostile or it was perceived by the students that the teachers would not intervene in cases of school violence had increased problems with at-school victimization.

The Khoury-Kassabri and colleagues (2004) study is important as it uses both a national sample and investigated bullying in a school environment context. The authors identified a number of school-related variables that could be possible contributors to bullying and perceptions of school violence. Some of the variables examined were perceived school safety, fairness of rules, and enforcement as well as risky behaviors such as carrying weapons, and drugs present on campus. A drawback to this study, however is that it can only be generalizable to Jewish and Arab 4th- through 11th-grade students attending school in Israel. Also, the survey was designed using jargon and examples common to that region of the world. A study using a national sample based on a similar survey would need to be conducted in the US.

A current national study being performed with in the US., similar to the Israel study, is the National Crime Victimization Survey School Crime Supplement (NCVS-SCS). The NCVS-SCS is a nationally representative sample of students taken from across the US. There have been other nationally representative samples taken, but very few

examined the topic of victimization or bullying specifically experienced by individuals. Researchers that have used the NCVS-SCS have looked at very specific aspects of the survey such as: fear behavior (Alvarez & Bachman, 1997), types of violence occurring at school (Kingery, Coggeshall, & Alford, 1998), critique of the 1995 version of the survey (Mayer & Leone, 1999), or to examine at two time points the effects Columbine had on school safety measures (Addington, 2002).

Purpose and Objective

Given the lack of research on what individual and environment characteristics contribute to an individual being victimized, the objective of this study was to examine the degree to which individual risk characteristics and school environment characteristics predict male high school student victimization (physical, verbal, relational, cyber). The focus of this study was to examine important school environment risk factors that may contribute to a male student being victimized (i.e., school safety measures, drug presence, gang presence, hate graffiti, and weapon presence). Individual risk factors previously identified in the literature review were extra-curricular involvement, grades, fighting, and truancy.

Perceived school environment variables as defined for this paper are school environment specific variables hypothesized to be influential in determining when a student is more likely to be bullied. School performance and engagement variables are those variables that are specific to the individual and are hypothesized to be influential in predicting whether a student is bullied. Research questions include:

1. What is the prevalence of self-reported cyber, verbal, physical, and relational bullying among high school males age 14 to 18 years old?

2. Are perceived school environment variables of high school males significantly correlated with self-reported bullying outcomes?

3. Are school performance and engagement variables of high school males significantly correlated with self-reported bullying outcomes?

4. To what degree do school environment variables and school performance and engagement variables predict a student's frequency of victimization?

CHAPTER III

METHODS

An extant dataset was used to answer the research questions related to the interrelationships between school performance and engagement variables, perceived school environment, and bullying.

Population and Sample

This study used an extant data set called the National Crime Victimization Survey School Crime Supplement, 2007. The National Crime Victimization Survey (NCVS) was designed by the Bureau of Justice Statistics (BJS) to measure the "nature and extent of crime throughout the U.S." (U.S. Department of Justice, 2007, p. 4). The Census Bureau conducts the survey to households across the U.S.

The administrators of the survey used a stratified multistage cluster design to select their sample. This probability sampling design was used for cost-effectiveness, geographic distribution, flexibility to change the number of units sampled after the assessment was in progress, and to produce an adequately precise estimate of the population (U.S. Department of Justice, 2007). The stratified part of the sample involves dividing the population into homogeneous groups and then taking random sample from each subgroup. In the clustering part of the sampling method, the subgroup is divided into clusters. Combining these two types of sampling (stratified and cluster) determines the sample to be a multistage sample as one technique must be used before the other.

The NCVS was administered to randomly selected households with members

ages 12 years and older. All “age-eligible individuals” in the selected household become part of the interviews. Over the course of 3 years, participants were administered the NCVS once every 6 months for a total of seven interviews. The first interview was given face-to-face. Remaining interviews were administered over the phone. After the final interview, the household was rotated out of the sample and a new household was selected.

After each year of questioning for the NCVS, the head of household was asked if there were any members of the household who were between the ages of 12-18. Periodically, researchers would like to gather additional information on specific issues related to crime. This was done through a supplement survey instrument. If there were individuals between the ages of 12 to 18 who were enrolled in primary or secondary education leading to a high school diploma, they were given a supplemental interview called the School Crime Supplement (SCS). Stipulations to administering the SCS are that the individual must have been enrolled sometime in the past 6 months in primary or secondary education leading to a diploma, prior to the interview. Students who were home schooled were not included in the SCS since the questions were deemed irrelevant to their situation (U.S. Department of Justice, 2007).

The SCS was administered at the end of the NCVS interview. The 2007 version of the SCS was conducted from January through June 2007. The sample size for the 2007 version of the NCVS interview was 11,161. Of those, 6,503 completed the SCS interview. The NCVS took approximately 25 minutes to complete. The SCS took an average of 10 minutes to complete. This data set is available on the BJS website in the

Inter-university Consortium for Political and Social Research (ICPSR) webpage.

For this thesis, participants were excluded from the analysis if they were not attending school that year or were being home schooled that year. As this study focuses on male high school students, the age range was also restricted to those of high school age, males ages 14 to 18. Cases were excluded if they had missing values or the survey was not completed. A total of 1,648 cases were included in the analyses.

Measures

The SCS (see Appendix) includes questions regarding the student's environment (type of school attending, public or private school, grade in school, school safety measures, graffiti, and availability of drugs and alcohol), fighting, bullying, and hate behaviors (crimes that occurred at school [school building, school grounds, or on a school bus]), avoidance (stayed away from school or particular places around school, avoided extracurricular activities for fear of being attacked or harmed), fear (how fearful the student is of being attacked or harmed), weapons (determine if a student(s) brought a weapon to school for protection), gangs (presence of gangs, contact with gangs or gang members at school), and other student characteristics (attendance, grades, plans regarding college).

Outcome Variables

Dependent variables in this study involve asking about the prevalence of particular actions taken against an individual. The likelihood of a student being

victimized was measured by whether or not the respondent experienced particular incidents specific to bullying. Before asking the question on bullying, the surveyor states the following:

"Now I have some questions about what students do at school that make you feel bad or are hurtful to you. We often refer to this as being bullied. You may include events you told me about already. During this school year, has any student bullied you? That is, has another student..."

The surveyor then proceeds to ask questions related to bullying. These questions can be found in Table 1. The full survey can be found in the appendix. Given previous literature the different questions were grouped into physical, verbal, and relational aggression. Questions on cyber bullying were not included in the questioning at this time but were asked later in the survey. These questions were not identified as bullying. However, their relative novelty to the study of bullying necessarily includes them within

Table 1

Questions Involving Victimization

Variable name	Question
VS071 – VS077	During this school year, has any other students bullied you? That is, has another student…
	Made fun of you, called you names, or insulted you? Spread rumors about you? Threatened you with harm? Pushed you, shoved you, tripped you, or spit on you? Tried to make you do things you did not want to do, for example give them money or other things? Excluded you from activities on purpose? Destroyed your property on purpose?
VS096A – VS096C	During this school year, has another student… Posted hurtful information about you on the Internet? Made unwanted contact, for example threatened or insulted you via instant messaging? Made unwanted contact, for example, threatened or insulted you via text (SMS) messaging?

the realm of school bullying as the victim is a target of their peers albeit outside of the school grounds. The question proceeds as follows:

"Now I have some questions about what students do that could occur anywhere and that make you feel bad or are hurtful to you. You may include events you told me about already. During this school year, has another student..." The surveyor then proceeds to ask questions categorized as electronic or cyber bullying.

For stated research question number four, adding frequency as a variable of interest was recommended. As the frequency question was asked after the bullying questions were asked and were not directly asked after each question, physical, verbal, and relational aggression variables needed to be aggregated to create a single variable called general bullying. As cyber bullying was paired with other types of bullying in the questionnaire and the frequency questions asked after the other bullying questions did not include cyber bullying, the cyber bullying variable cannot be included in the aggregate variable of general bullying. A frequency variable was asked after the cyber bullying questions were administered.

Predictor Variables

Questions and the variable names related to school performance and engagement can be found in Table 2. As the main research question focuses on general school involvement and not the specific types of involvement a student may be engaged in, a sum score for the question on extracurricular involvement (VS028-VS034) was created which has a maximum score of seven (involvement in all extracurricular activities and

Table 2

Questions Involving School Performance and Engagement

Variable name	Question
VS028 – VS034	During the last school year, have you participated in any of the following extracurricular activities sponsored by your school such as: Athletic teams at school? Spirit groups, for example, Cheerleading or Pep Club? Performing Arts, for example, Band, Orchestra, or Drama? Academic clubs, for example, Debate Team, Honor Society, Spanish Club, or Math Club? School Government? Service Clubs? Other school clubs or school activities?
VS133	During this school year, across all subjects how you gotten mostly: A's? B's? C's? D's? F's? or School does not give grades/no alphabetic grade equivalent.
VS069	During the last 6 months, how many times have you been in a physical fight at school?
VS131	During the last 4 weeks, did you skip any classes?

other clubs and activities) and a minimum of zero (involvement in no extracurricular activities). Grades (VS133) were recoded as higher values being equivalent to higher grades (A= 5, B = 4, C = 3, D = 2, F = 1). Fighting (VS068 and VS069) and truancy (VS131 & VS132) are continuous variables. Variables VS068 and VS131 simply asked if the student had been involved in fighting or had skipped school. These variables were used to screen for variables VS069 and VS132, which are frequency variables for fighting and truancy.

Questions and the variable names related to school environment can be found in Table 3. Drugs (VS056-VS065) was combined into a sum score with a high of 12 (meaning many drugs are available on campus) and a low of 0 (meaning no drugs are available on campus). Safety measures (VS035-VS043) was also made a sum score for

Table 3

Questions for Perceived School Environment

Variable name	Question
VS056 – VS065	Is it possible to get _____ at your school? Alcoholic beverages; Marijuana; Crack; Other forms of cocaine; Uppers such as ecstasy, crystal meth or other illegal stimulants; Downers such as GHB or sleeping pills; LSD or acid; PCP or angel dust; Heroin or smack; Prescription drugs illegally obtained without a prescription, such as Ritalin or Oxycontin; Other illegal drugs.
VS126	Are there gangs at your school? (Also known as street gangs, fighting gangs, crews, or something else. Gangs may use common names, signs, symbols, or colors.)
VS035 – VS043	Does your school take any measures to make sure students are safe? For example does the school have: Security guards or assigned police officers? Other school staff or other adults supervising the hallway? Metal detectors? Locked entrance or exit doors during the day? A requirement that visitors sign in? Locker checks? A requirement that students wear badges or picture identification? One or more security cameras to monitor the school? A code of conduct, that is, a set of written rules or guidelines that the school provides you?
VS123	Do you know any students who have brought a gun to your school during the school year?
VS105	During the school year, have you seen any hate-related words or symbols written in school classrooms, school bathrooms, school hallways, or on the outside of your school building?

the number of safety measures a school employ with a high of nine (meaning the school employs many safety measures) and a low of zero (meaning the school does not have safety measures). Gangs (VS126), weapon (VS123), and hate graffiti (VS105) were all yes/no questions and did not need to be adjusted.

CHAPTER IV

RESULTS

Prevalence and Correlations

The first hypothesis examined the prevalence of the different forms of bullying among high school males in Table 4. Examination of the results indicated a higher proportion of individuals experiencing verbal, relational, and physical bullying. Adolescent males (n = 1,648) of high school age (14 to 18 years) were selected from the School Crime Supplement (SCS). A very small proportion of individuals experienced cyber bullying.

Regression Analyses

Research questions 2 and 3 were addressed for each type of bullying outcome:

Table 4

Summary of Bullying Frequency

		Number of males (N = 1,648)	
Form	Item	n	%
Physical	Pushed, shoved, tripped, or spit on them	155	9.4
Verbal	Made fun of, called names, or insulted them	262	15.9
	Threatened them with harm	84	5.1
Relational	Excluded from activities on purpose	65	3.9
	Rumors were spread about them	203	12.3
Cyber	Had hurtful information posted on the internet	15	.9
	Threatened or insulted via text (SMS) messaging	14	.8
	Threatened or insulted via instant messaging	20	1.2

Note. These numbers and percentages are not additive as an individual can experience more than one of these types of bullying victimization.

physical, verbal, relational, and cyber. For each bullying outcome, two regression analyses were performed before proceeding to the next bullying outcome, one for the perceived school environment variables and one for the school performance and engagement characteristics.

A direct logistic regression approach was used for each of the different types of bullying experienced (verbal, physical, relational, and cyber). This means that all the predictors were entered into a regression equation simultaneously as there were no specific hypotheses regarding order or importance of the predictors (Tabachnick & Fidell, 2001).

Diagnostics

Variables were examined for normality. An attempt was made to make the continuous variables (i.e., fighting, truant, extracurricular involvement, school safety measures, and drug availability) more normal by taking the square root, cube root or natural log of those variables as the distribution of each of these variables was positively skewed. These attempts failed as they did not make the distribution more normal. As a result of these transformations being unsuccessful, the non-transformed data were used.

Diagnostic statistics and graphic plots were created to examine problems of multicollinearity and influential outliers that may be present in the model. Variance inflation factor (VIF) values were obtained for each of the independent variables in the final model to diagnose any multicollinearity problems. Cohen, Cohen, West, and Aiken (2003) stated that for determining if there is a problem with multicollinearity is if the

value is 10 or greater the model has serious problems with multicollinearity. However, these authors also indicated that for the behavioral sciences values of 6 or 7 is the proposed threshold value for the VIF. In all following analyses, VIF values were found to be around 1, indicating very low problems with multicollinearity.

Studentized residuals, predicted-values, deviance and Pearson residuals, and DFBETAs were plotted to determine fit of the model and cases of influence. If cases were detected to be influential in the results of the final model, the cases were examined for possible extreme values. One case was deleted due to an extreme value for fighting (37 fights).

An item of note provided by Cohen and colleagues (2003) that concerns diagnostic statistics for logistic regression is the identification of extreme values or outliers identified by residuals, DFBETAs, and/or hat values indicating cases that may be potentially problematic. These cases should be viewed with caution or removed from the analysis. After deleting the case with an extreme fighting score, other variables were identified as having extreme values. Due to the nature of the data set in having so many zero values or values of one, the cases that were identified as potentially problematic were retained as they contributed to the study.

Model Fit

Each of the logistic regression models were examined using an analysis of deviance table to determine which independent variables did not contribute to the overall fit of the model. Variables that were identified as nonsignificant ($p > .05$) were excluded

from the model. A subsequent logistic regression model was performed without the excluded variable after which another analysis of deviance table was obtained to identify other variables to be removed from the final model. This process was repeated until all variables in the model, as shown by the analysis of deviance table, were determined to be significant ($p < .05$). The overall fit of the final model was determined by the Akaike information criterion (AIC).

The AIC is a goodness of fit statistic derived from an estimated model. The AIC value is determined by taking into account the number of coefficients being tested as well as how those coefficients contribute to the estimated model. AIC values were compared across models to determine best fit parsimony (Cohen et al., 2003). Final model selection, or the more parsimonious model, was determined by the model with the smallest AIC value.

Odds Ratios

Odds ratios were examined to determine influence of the different predictors on the outcome variable. An odds ratio equal to 1.0 indicates no significant association between two variables (Agresti, 2007). In addition, odds ratios confidence interval includes 1.0 need to be interpreted cautiously as some cases may have no association with the dependent variable. When the odds ratio value equals 1.0 the independent variable has little or no influence on the dependent variable, in this case type of bullying, and assumptions and interpretation must be made with caution.

Cox and Snell R^2 as well as Nagelkerke R^2 are provided in the results table for

each regression analysis. The Cox and Snell R^2, in maximum likelihood estimation, is derived from the likelihood ratio chi-square statistic whereas the Nagelkerke R^2 takes the Cox and Snell R^2 value and divides it by its maximum possible value so as to better estimate the R^2 of least squares regression. Thus, the Cox and Snell R^2 has no maximum and the Nagelkerke R^2 has a maximum value of 1, indicating a perfect fit. Of note, Hosmer and Lemeshow (1989) caution the publishing of pseudo R^2 values as they can be misinterpreted as linear regression values when in fact the values are for a logistic model.

Verbal Bullying

Perceived School Environment

The second hypothesis of this study examined whether or not perceived school environment variables of high school males significantly correlated with verbal bullying outcomes. A logistic regression model was analyzed with verbal bullying as the criterion variable and number of school safety measures, number of drugs available, seen a gun at school, graffiti present at school, and gang present at school as predictor variables. The analysis of deviance for the first model indicated Gang Presence (LR chi-square = .004, $df = 1, > .05$) be removed from the model. The analysis of deviance of for the second model (without Gang Presence) indicated Gun Presence (LR chi-square = 1.261, $df = 1, > .05$) be removed from the model. The analysis of deviance for the third model (without Gang Presence and Gun Presence) indicated School Safety Measures (LR chi-square = 2.210, $df = 1, > .05$) be removed from the model. The analysis of deviance for the fourth model (without Gang Presence, Gun Presence, and School Safety Measures) did not

indicate further variables to be removed from the model.

Upon examination of the four models, the third model was selected as the most parsimonious as it had the smallest AIC. The results of all logistic models for perceived school environment variables predicting verbal bulling are presented in Table 5.

The results of model three indicate drug availability and presence of graffiti were found to predict verbal bullying. The values of the coefficients indicated that as more drugs were available on campus the probability of being verbally bullied increased by a factor of 1.14 (95% CI 1.08 and 1.20), and if graffiti was present on campus it was associated with an increase in the probability of verbal bullying by a factor of 2.67 (95% CI 2.02 and 3.52). As the confidence interval for school safety measures crossed 1.0 (*OR* = .93, 95% CI .85 and 1.02) it can be determined that the number of school safety measures did not predict verbal bullying.

Cases identified as having influence, or extreme values were not removed from the analysis as they were important to the overall hypotheses. VIF scores for each of the independent variables indicated low multicollinearity (School Safety Measures = 1.01, Drug Availability = 1.07, Graffiti = 1.07). Cox and Snell (R^2 = .06) and Nagelkerke (R^2 = .10) were quite small indicating a poor fit of the model.

School Performance and Engagement

The third hypothesis of this study examined whether or not school performance and engagement variables of high school males significantly correlated with verbal bullying outcomes. A logistic regression model was fit with verbal bullying as the criterion variable and grades, number of fights, number of times truant, and involvement

Table 5

Summary of Logistic Regression Models for Perceived School Environment Variables Predicting Verbal Bullying (n = 1,636)

				95% CI	
Model	*B*	*SE B*	*OR*	2.5%	97.5%
Model 1					
Intercept	-1.87***	.29	.15	.09	.27
School Safety Measures	-.07	.05	.93	.85	1.02
Drug Availability	.13***	.03	1.13	1.08	1.19
Gun Presence	.28	.25	1.32	.80	2.13
Graffiti Presence	.96***	.14	2.62	1.98	2.48
Gang Presence	.01	.16	1.01	.74	1.37
Cox & Snell R^2	.06				
Nagelkerke R^2	.10				
AIC	1405.28				
Model 2					
Intercept	-1.87***	.29	.15	.09	.27
School Safety Measures	-.07	.05	.93	.85	1.02
Drug Availability	.13***	.03	1.13	1.08	1.19
Gun Presence	.28	.25	1.32	.81	2.12
Graffiti Presence	.96***	.14	2.62	1.99	3.47
Cox & Snell R^2	.06				
Nagelkerke R^2	.10				
AIC	1403.28				
Model 3					
Intercept	-1.87***	.29	.15	.09	.27
School Safety Measures	-.07	.05	.93	.85	1.02
Drug Availability	.13***	.03	1.14	1.08	1.20
Graffiti Presence	.98***	.14	2.67	2.02	3.52
Cox & Snell R^2	.06				
Nagelkerke R^2	.10				
AIC	1402.54				
Model 4					
Intercept	-2.28***	.11	.10	.08	.13
Drug Availability	.13***	.03	1.14	1.08	1.19
Graffiti Presence	.97***	.14	2.64	2.00	3.48
Cox & Snell R^2	.06				
Nagelkerke R^2	.10				
AIC	1402.75				

Note: OR = Odds Ratio.

*$p < .05$. ** $p < .01$. *** $p < .001$.

in extracurricular activities as predictor variables. The analysis of deviance for the first model indicated extracurricular involvement (likelihood ratio [LR] chi-square = 1.55, *df* = 1, $p > .05$) be removed from the model. The analysis of deviance of for the second model (without extracurricular involvement) indicated truant (LR chi-square = 3.06, *df* = 1, $p > .05$) be removed from the model. Analysis of deviance for the third model (without extracurricular involvement and truant) did not indicate any variables to be removed.

Upon examination of the three models, the second model was selected as the most parsimonious as it had the smallest AIC. The results of all logistic models for school performance and engagement variables predicting verbal bulling are presented in Table 6.

Model two was selected as the final model for verbal bullying and school performance and engagement variables as it had the smallest AIC with verbal bullying as the criterion variable and grades, number of fights, and number of times truant as predictor variables. One thousand six hundred thirty-six cases were analyzed. Grades and number of fights were found to predict verbal bullying. As grades increase, the odds of being verbally bullied decreases by a factor of .79 (95% CI .68 and .93). Each unit increase in the number of fights was associated with an increase in the probability of verbal bullying by a factor of 1.52 (95% CI 1.32 and 1.75). As truancy was close to 1.0 (*OR* = 1.07, 95% CI 1.00 and 1.15) and the 95% CI included 1.0, it can be determined that Truancy does not predict verbal bullying.

VIF scores for each of the independent variables indicated low multicollinearity (grades = 1.05, fighting = 1.04, truant = 1.02). Cox and Snell (R^2 = .04) and Nagelkerke

(R^2 = .06) were quite small indicating a poor fit of the model.

Table 6

Summary of Logistic Regression Models for School Performance and Engagement Variables Predicting Verbal Bullying (n = 1,636)

				95% CI	
Model	*B*	*SE B*	*OR*	2.5%	97.5%
Model 1					
Intercept	-.78*	.32	.46	.24	.86
Grades	-.26**	.09	.77	.65	.91
Fighting	.42***	.07	1.52	1.32	1.76
Truant	.06	.04	1.07	.99	1.14
Extracurricular Involvement	.08	.06	1.08	.96	1.22
Cox & Snell R^2	.037				
Nagelkerke R^2	.062				
AIC	1445.1				
Model 2					
Intercept	-.83*	.32	.44	.23	.82
Grades	-.23**	.08	.79	.68	.93
Fighting	.42***	.07	1.52	1.32	1.75
Truant	.07	.04	1.07	.99	1.14
Cox & Snell R^2	.037				
Nagelkerke R^2	.061				
AIC	1444.61				
Model 3					
Intercept	-.74*	.32	.48	.26	.89
Grades	-.25**	.08	.78	.67	.91
Fighting	.43***	.07	1.53	1.33	1.77
Cox & Snell R^2	.035				
Nagelkerke R^2	.058				
AIC	1445.66				

Note: OR = Odds Ratio.

* $p < .05$. ** $p < .01$. *** $p < .001$.

Physical Bullying

Perceived School Environment

The second hypothesis of this study examined whether or not perceived school environment variables of high school males significantly correlated with physical bullying outcomes. A logistic regression model was fit with physical bullying as the criterion variable and number of school safety measures, number of drugs available, seen a gun at school, graffiti present at school, and gang present at school as predictor variables. The analysis of deviance for the first model indicated gang presence (LR chi-square = .083, $df = 1$, $p > .05$ be removed from the model. The analysis of deviance of for the second model (without gang presence) indicated School Safety (LR chi-square = 2.808, $df = 1$, $p > .05$) be removed from the model. The analysis of deviance for the third model (without gang presence and school safety measures) did not indicate any further variables be removed from the model.

Upon examination of the three models, the second model was selected as the most parsimonious as it had the smallest AIC. The results of all logistic models fit for perceived school environment variables predicting verbal bulling are presented in Table 7.

Results for model two indicated drug availability, gun presence, and graffiti presence were found to predict physical bullying. The values of the coefficients for as the number of drugs available at school increased the odds of being physically bullied at school increased by a factor of 1.10 (95% CI 1.03 and 1.17). Also if guns or graffiti were present the odds of being physically bullied increased by a factor of 2.17 for gun presence

Table 7

Summary of Logistic Regression Models for Perceived School Environment Variables Predicting Physical Bullying (n = 1,636)

				95% CI	
	B	*SE B*	*OR*	2.5%	97.5%
Model 1					
Intercept	-2.41***	.37	.09	.04	.18
School safety measures	-.10	.06	.90	.80	1.02
Drug availability	.09**	.03	1.10	1.03	1.17
Gun presence	.76**	.27	2.14	1.23	3.61
Graffiti presence	.99***	.19	2.68	1.86	3.89
Gang presence	.06	.20	1.06	.71	1.55
Cox & Snell R^2	.04				
Nagelkerke R^2	.09				
AIC	963.47				
Model 2					
Intercept	-2.42***	.37	.09	.04	.18
School safety measures	-.10	.06	.90	.80	1.02
Drug availability	.09**	.03	1.10	1.03	1.17
Gun presence	.78**	.27	2.17	1.26	3.62
Graffiti presence	1.00***	.18	2.71	1.89	3.90
Cox & Snell R^2	.04				
Nagelkerke R^2	.09				
AIC	961.55				
Model 3					
Intercept	-3.00***	.15	.05	.04	.07
Drug availability	.09**	.03	1.10	1.03	1.67
Gun presence	.75**	.27	2.12	1.24	3.54
Graffiti presence	.98***	.18	2.67	1.86	3.84
Cox & Snell R^2	.04				
Nagelkerke R^2	.09				
AIC	962.36				

Note: OR = Odds Ratio.

* $p < .05$. ** $p < .01$. *** $p < .001$.

(95% CI 1.26 and 3.26) and 2.71 for graffiti presence (95% CI 1.88 and 3.90). School safety measures was not a significant predictor of physical bullying.

VIF scores for each of the independent variables indicated low multicollinearity (school safety = 1.01, drug availability = 1.11, gun presence = 1.05, graffiti = 1.10). Cox and Snell (R^2 = .04) and Nagelkerke (R^2 = .09) were quite small indicating a poor fit of the model.

School Performance and Engagement Variables

The third hypothesis of this study examined whether or not school performance and engagement variables of high school males significantly correlated with physical bullying outcomes. A logistic regression model was fit with physical bullying as the criterion variable and grades, number of fights, number of times truant, and involvement in extracurricular activities as predictor variables. The analysis of deviance for the first model indicated truant (LR chi-square = .017, df = 1, p > .05) be removed from the model. The analysis of deviance of for the second model (without truant) indicated Grades (LR chi-square = 2.406, df = 1, p > .05) be removed from the model. The analysis of deviance for the third model (without truant and grades) indicated extracurricular involvement (LR chi-square = 1.613, df = 1, p > .05) be removed from the model. No variables were removed from model 4 as the analysis of deviance indicated the remaining variables were significant.

Upon examination of the three models, the second model was selected as the most parsimonious as it had the smallest AIC. The results of all models fit are presented in

Table 8.

The results for model two indicated number of fights to predict physical bullying. The values of the coefficients indicated number of fights increased the probability of being physically bullied increased by a factor of 2.12 (95% CI 1.80 and 2.50). As the confidence intervals for grades and extracurricular involvement included 1.0, it can be determined that grades and extracurricular involvement were not predictive of physical bullying.

VIF scores for each of the independent variables indicated low multicollinearity (grades = 1.18, fighting = 1.05, extracurricular involvement = 1.13). Cox and Snell (R^2 = .06) and Nagelkerke (R^2 = .14) were quite small indicating a poor fit of the model.

Relational Bullying

Perceived School Environment

The second hypothesis of this study examined whether or not perceived school environment variables of high school males significantly correlated with relational bullying outcomes. A logistic regression model was fit with relational bullying as the criterion variable and number of school safety measures, number of drugs available, seen a gun at school, graffiti present at school, and gang present at school as predictor variables. The analysis of deviance for the first model indicated school safety measures (LR chi-square = .991, $df = 1$, $p > .05$) be removed from the model. The analysis of deviance of for the second model (without school safety measures) indicated gang presence (LR chi-square = .827, $df = 1$, $p > .05$) be removed from the model. The

Table 8

Summary of Logistic Regression Models for School Performance and Engagement Variables Predicting Relational Bullying (*n* = 1,636)

				95% CI	
Model	*B*	*SE B*	*OR*	2.5%	97.5%
Model 1					
Intercept	-2.02***	.44	.13	.05	.31
Grades	-.18	.11	.84	.67	1.05
Fighting	.75***	.08	2.12	1.80	2.51
Truant	-.01	.05	.99	.89	1.09
Extracurricular involvement	.14	.08	1.15	.98	1.34
Cox & Snell R^2	.06				
Nagelkerke R^2	.14				
AIC	924.66				
Model 2					
Intercept	-2.03***	.44	.13	.05	.30
Grades	-.18	.11	.84	.67	1.05
Fighting	.75***	.08	2.12	1.80	2.50
Extracurricular involvement	.14	.08	1.15	.97	1.34
Cox & Snell R^2	.06				
Nagelkerke R^2	.14				
AIC	922.68				
Model 3					
Intercept	-2.68	.14	.07	.05	.09
Fighting	.78	.08	2.18	1.86	2.57
Extracurricular involvement	.10	.08	1.10	.95	1.28
Cox & Snell R^2	.06				
Nagelkerke R^2	.13				
AIC	923.08				

Note: OR = Odds Ratio.

* $p < .05$. ** $p < .01$. *** $p < .001$.

analysis of deviance for the third model (without school safety measures and gang presence) indicated that gun presence (LR chi-square = 2.903, $df = 1$, $p > .05$) should be removed from the model. The analysis of deviance for the fourth model (without school

safety measures, gang presence, and gun presence) did not indicate any further variables be removed from the model as the remaining variables were significant.

Upon examination of the four models, the third model was selected as the most parsimonious as it had the smallest AIC. The results of all models fit for perceived school environment variables predicting verbal bulling are presented in Table 9.

Results for model three indicate drug availability and graffiti were found to predict relational bullying. The values of the coefficients indicated that as the number of drugs available at school increased the odds of being relationally bullied increased by a factor of 1.17 (95% CI 1.11 and 1.24). The odds of being relationally bullied also increased if graffiti was present, by a factor of 2.06 (95% CI 1.52 and 2.78). The coefficient for gun presence indicated that the presence of a gun brought to school by another student increased the odds that a student will experience relational bullying by a factor of 1.55 (95% CI .93 and 2.51) but was not statistically significant. It is also noted that as the confidence interval for gun presence includes 1.0 and it can be determined that gun presence had little effect on relational bullying and should be interpreted with caution.

VIF scores for each of the independent variables indicated low multicollinearity in the final model (drug availability = 1.09, gun presence = 1.04, graffiti = 1.08). Cox and Snell (R^2 = .05) and Nagelkerke (R^2 = .10) were quite small indicating a poor fit of the model.

Table 9

Summary of Logistic Regression Models for Perceived School Environment Variables Predicting Relational Bullying (n = 1,636)

				95% CI	
Model	*B*	*SE B*	*OR*	2.5%	97.5%
Model 1					
Intercept	-2.82***	.33	.06	.03	.11
School safety measures	.05	.05	1.05	.95	1.17
Drug availability	.17***	.03	1.18	1.12	1.24
Gun presence	.48	.26	1.62	.97	2.65
Graffiti presence	.75***	.16	2.11	1.55	2.87
Gang presence	-.18	.17	.83	.59	1.16
Cox & Snell R^2	.05				
Nagelkerke R^2	.10				
AIC	1234.6				
Model 2					
Intercept	-2.52***	.12	.08	.06	.10
Drug availability	.17***	.03	1.18	1.12	1.24
Gun presence	.48	.26	1.62	.97	2.65
Graffiti presence	.74***	.16	2.11	1.55	2.87
Gang presence	-.15	.17	.86	.61	1.19
Cox & Snell R^2	.05				
Nagelkerke R^2	.10				
AIC	1233.6				
Model 3					
Intercept	-2.54***	.12	.08	.06	.10
Drug availability	.16***	.03	1.17	1.11	1.24
Gun presence	.44	.25	1.55	.93	2.51
Graffiti presence	.72***	.15	2.06	1.52	2.78
Cox & Snell R^2	.05				
Nagelkerke R^2	.10				
AIC	1232.4				
Model 4					
Intercept	-2.53***	.11	.08	.06	.10
Drug availability	.17***	.03	1.18	1.12	1.24
Graffiti presence	.75***	.15	2.11	1.57	2.86
Cox & Snell R^2	.05				
Nagelkerke R^2	.09				
AIC	1233.3				

Note: OR = Odds Ratio.

* $p < .05$. ** $p < .01$. *** $p < .001$.

School Performance and Engagement

The third hypothesis of this study examined whether or not school performance and engagement variables of high school males significantly correlated with relational bullying outcomes. A logistic regression model was fit with relational bullying as the dependent variable and grades, number of fights, number of times truant, and involvement in extracurricular activities as independent variables. The analysis of deviance for the first model indicated grades (LR chi-square = 2.59, $df = 1$, $p > .05$) be removed from the model. The analysis of deviance of for the second model (without grades) indicated extracurricular involvement (LR chi-square = 2.97, $df = 1$, $p > .05$) be removed from the model. The analysis of deviance for the third model (without grades and extracurricular involvement) did not indicate any more variables to be removed as they were significant.

Upon examination of the three models, the first model was selected as the most parsimonious as it had the smallest AIC. The results of all logistic regression models fit are presented in Table 10.

Results obtained from model one indicates number of fights was found to predict being relationally bullied. The values of the coefficients indicated that as the number of fights increased, the odds of being relationally bullied increased by a factor of 1.58 (95% CI 1.36 and 1.84). The odds of being relationally bullied also increased slightly as truancy increased by a factor of 1.20 (95% CI 1.11 and 1.30) but was not significant. The coefficients for extracurricular involvement indicated that the more extracurricular activities a student is involved in the odds of being relationally bullied increased by a

Table 10

Summary of Logistic Regression Models for School Performance and Engagement Variables Predicting Relational Bullying (*n* = 1,636)

				95% CI	
Model	*B*	*SE B*	*OR*	2.5%	97.5%
Model 1					
Intercept	-1.62***	.37	.20	.10	.40
Grades	-.15	.09	.86	.71	1.03
Fighting	.46***	.08	1.58	1.36	1.84
Truant	.18***	.04	1.20	1.11	1.30
Extracurricular involvement	.14*	.07	1.15	1.01	1.31
Cox & Snell R^2	.05				
Nagelkerke R^2	.09				
AIC	1242.9				
Model 2					
Intercept	-2.19***	.11	.11	.09	.14
Fighting	.48***	.08	1.62	1.40	1.88
Truant	.19***	.04	1.21	1.12	1.32
Extracurricular involvement	.11	.06	1.12	.98	1.26
Cox & Snell R^2	.05				
Nagelkerke R^2	.08				
AIC	1243.5				

Note: OR = Odds Ratio.

* $p < .05$. ** $p < .01$. *** $p < .001$.

factor of 1.15 (95% CI 1.01 and 1.31) but was not statistically significant. It is also noted that as the confidence interval for grades included 1.0, it can be determined that grades and Extracurricular Involvement had little effect on relational bullying. It is noted, however, that poor grades increased the odds of being relationally bullied by a factor of .86 (95% CI .71 and 1.03).

VIF scores for each of the independent variables indicated low multicollinearity in the final model (grades = 1.19, fighting = 1.04, truant = 1.02, extracurricular

involvement = 1.13). Cox and Snell (R^2 = .05) and Nagelkerke (R^2 = .09) were quite small indicating a poor fit of the model.

Cyber Bullying

Perceived School Environment

The second hypothesis of this study examined whether or not perceived school environment variables of high school males significantly correlated with cyber bullying outcomes. Alogistic regression model was fit with cyber bullying as the criterion variable and number of school safety measures, number of drugs available, seen a gun at school, graffiti present at school, and gang presence at school as predictor variables. The analysis of deviance for the first model indicated gang presence (LR chi-square = .138, df = 1, p > .05) be removed from the model. The analysis of deviance of for the second model (without gang presence) indicated school safety measures (LR chi-square = .594, df = 1, p > .05) be removed from the model. The analysis of deviance for the third model (without gang presence and school safety measures) indicated that gun presence (LR chi-square = 2.68, df = 1, p > .05) should be removed from the model. The analysis of deviance for the fourth model (without gang presence, school safety measures, and gun presence) did not indicate any further variables be removed from the model as the remaining variables were significant.

Upon examination of the four models, the third model was selected as the most parsimonious as it had the smallest AIC. Results of all models examined for perceived school environment variables predicting cyber bulling are presented in Table 11.

Table 11

Summary of Logistic Regression Models for Perceived School Environment Variables Predicting Cyber Bullying (n = 1,636)

				95% CI	
	B	*SE B*	*OR*	2.5%	97.5%
Model 1					
Intercept	-5.68***	.88	.003	.001	.02
School safety measures	.09	.13	1.09	.85	1.42
Drug availability	.18**	.06	1.20	1.07	1.34
Gun presence	.74	.47	2.09	.78	5.03
Graffiti presence	1.19**	.41	3.30	1.52	7.78
Gang presence	.14	.39	1.16	.53	2.48
Cox & Snell R^2	.02				
Nagelkerke R^2	.12				
AIC	307.27				
Model 2					
Intercept	-5.72***	.87	.003	.001	.02
School safety measures	.10	.13	1.10	.86	1.43
Drug availability	.19**	.06	1.20	1.07	1.34
Gun presence	.78	.46	2.18	.82	5.09
Graffiti presence	1.22**	.41	3.37	1.56	7.90
Cox & Snell R^2	.02				
Nagelkerke R^2	.12				
AIC	305.41				
Model 3					
Intercept	-5.12***	.37	.006	.003	.01
Drug availability	.19***	.06	1.21	1.08	1.35
Gun presence	.80	.46	2.22	.84	5.18
Graffiti presence	1.22**	.41	3.39	1.57	7.94
Cox & Snell R^2	.02				
Nagelkerke R^2	.11				
AIC	304				
Model 4					
Intercept	-5.10***	.36	.006	.003	.01
Drug availability	.20***	.06	1.22	1.09	1.36
Graffiti presence	1.28**	.41	3.61	1.68	8.41
Cox & Snell R^2	.02				
Nagelkerke R^2	.11				
AIC	304.68				

Note: OR = Odds Ratio.

* $p < .05$. ** $p < .01$. *** $p < .001$.

The results for model three indicated drug availability and graffiti were found to predict cyber bullying. The values of the coefficients indicate that as the number of drugs available at school increased, the odds of being cyber bullied increased by a factor of 1.21 (95% CI 1.08 and 1.35). The odds of being cyber bullied also increased if graffiti was present, by a factor of 3.39 (95% CI 1.57 and 7.94). The coefficient for gun presence indicated that the presence of a gun brought to school by another student increased the odds that a student will experience relational bullying by a factor of 2.22 (95% CI .84 and 5.18) but was not statistically significant. It is also noted that as the confidence interval for gun presence includes 1.0 and it can be determined that grades and extracurricular involvement had little effect on cyber bullying and should be interpreted with caution.

VIF scores for each of the independent variables indicated low multicollinearity in the final model (drug availability = 1.09, gun presence = 1.05, graffiti = 1.07). Cox and Snell (R^2 = .02) and Nagelkerke (R^2 = .12) were quite small indicating a poor fit of the model.

School Performance and Engagement

The third hypothesis of this study examined whether or not school performance and engagement variables of high school males significantly correlated with cyber bullying outcomes. A logistic regression model was fit with cyber bullying as the criterion variable and grades, number of fights, number of times truant, and involvement in extracurricular activities as predictor variables. The analysis of deviance for the first model indicated Truant (LR chi-square = .53, $df = 1$, $p > .05$) be removed from the model. The analysis of deviance for the second model (without truant) did not indicate

any more variables to be removed as they were significant.

Upon examination of the two models, the second model was selected as the most parsimonious as it had the smallest AIC. The results of all models fit are presented in Table 12.

Results for model two indicate grades and number of fights were found to predict being cyber bullied. The values of the coefficients indicated that as grades decreased the odds of being cyber bullied increased by a factor of .62 (95% CI .41 and .96). The values of the coefficients also indicated that as the number of fights increased the odds of being

Table 12

Summary of Logistic Regression Models for School Performance and Engagement Variables Predicting Cyber Bullying (*n* = 1,636)

				95% CI	
Model	*B*	*SE B*	*OR*	2.5%	97.5%
Model 1					
Intercept	-3.08***	.81	.05	.01	.21
Grades	-.45*	.22	.64	.42	.99
Fighting	.36***	.11	1.43	1.15	1.76
Truant	.05	.06	1.05	.91	1.17
Extracurricular Involvement	.54***	.14	1.72	1.31	2.24
Cox & Snell R^2	.02				
Nagelkerke R^2	.10				
AIC	310.82				
Model 2					
Intercept	-2.98***	.79	.05	.01	.22
Grades	-.47*	.22	.62	.41	.96
Fighting	.38***	.10	1.46	1.19	1.79
Extracurricular Involvement	.54***	.14	1.72	1.31	2.24
Cox & Snell R^2	.02				
Nagelkerke R^2	.10				
AIC	309.35				

Note: OR = Odds Ratio.
* $p < .05$. ** $p < .01$. *** $p < .001$.

cyber bullied increased by a factor of 1.46 (95% CI 1.19 and 1.79). The odds of being cyber bullied also increased as involvement in extracurricular activities increased by a factor of 1.72 (95% CI 1.31 and 2.24) but was not statistically significant.

VIF scores for each of the independent variables indicated low multicollinearity in the final model (grades = 1.37, fighting = 1.22, extracurricular involvement = 1.22). Cox and Snell (R^2 = .02) and Nagelkerke (R^2 = .10) were quite small indicating a poor fit of the model.

General Bullying, Cyber Bullying, and Frequency

In the final hypothesis I examined how well school environment variables and school performance and engagement variables predict a student's frequency of victimization. The frequency variable for general bullying was rescaled to a continuous variable. This was done by examining the number of days in a traditional school year in the US. A traditional school year in the US begins in August and ends in May of the following year. Excluding holidays, breaks, and weekends, there are 180 school days in a school year, 21.5 school days (on average) in a month, and 5 school days in a week. As the categorical variable for frequency was constructed with an individual being bullied 1 to 2 times a year, 1 to 2 times a month, 1 to 2 times a week, and daily, the mean of "1 to 2 times" was taken (m = 1.5) and divided by the number of days for each frequency scale of 1 to 2 times a year (1.5/180 school days = .00833), 1 to 2 times a month (1.5/21.5 school days = .0697), 1 to 2 times a week (1.5/5 school days = .3) and daily (= 1). Respondents who reported that they "Don't know" were removed from the analysis. Only those who

indicated that they had been bullied (physically, verbally, and/or relationally) were included in the analysis. An attempt was made to normalize the new continuous outcome variable General Bullying Frequency. Due to the nature of the data, it was difficult to remove the positive skew and the variable was not transformed.

A multiple regression analysis was performed. Backward elimination was used for the analysis of general bullying frequency and all predictors as well as for cyber bullying frequency and all predictors. Backwards elimination selects predictors for removal based on the smallest semi-partial r^2 that will significantly decrease R^2 and removes these predictors one at a time. The analysis stops when all predictors that do not significantly contribute to R^2 have been removed (Tabachnick & Fidell, 2007). Sixteen cases were deleted due to missing values in the outcome variable. These eliminated cases were cases that had responded "Don't know" when asked how frequently they had been bullied.

Many of the variables in the analysis had a skewed distribution. Transforming each of the variables makes interpretation increasingly difficult. As a result, non-transformed variables were used for the analysis. No problems were noticed with multicollinearity. Outliers have been addressed in the previous analyses.

The final model identified by the backward elimination regression is shown in Table 13. This table displays the regression coefficients (B) and intercept, standard error of the coefficients ($SE\ B$), t value for each of the independent variables, standardize coefficients (β), R^2, and adjusted R^2. The regression was significantly different from 0, $F(4, 386) = 4.71$, $p = .001$, with R^2 at .047. The adjusted R^2 value of .037 indicates that a

Table 13

Summary of Final Regression Analysis for All Predictors Predicting General Bullying Frequency (*n* = 391)

Variable	*B*	*SE B*	*t*	*β*
Intercept	.280***	.061	4.58	
Gangs	-.061*	.027	-2.26	-.117
Graffiti	.039	.026	1.49	.076
Grades	-.045**	.015	-3.04	-.155
Truant	.011	.006	1.88	.095

R^2 = .047. adj. R^2 = .037. AIC = 33.19.

*p < .05. **p < .01. ***p < .001.

little over 3% of the variability in being frequently bullied either physically, verbally, or relationally is predicted by gangs being present in school, graffiti being present in school, low grades, and number of times truant. For the two regression coefficients that were significant, 95% confidence intervals (CI) were calculated. The CI for gang presence is -0.11 to -0.008, and those for grades were -0.07 to -0.02.

The size and direction of the relationships of the independent variables on general bullying frequency indicate that bulling frequency increases in absence of gangs at school, in the presence of graffiti at school, when students have poor grades, and when students are truant, or skip school.

It has been noted that truancy may be an outcome for bullying as well as an indicator variable. As the research questions for this study strictly deal with bullying as an outcome, using truancy as an outcome may be examined in future research that examines what variables contribute to a student's truant behavior. However, an additional model was performed without truancy in the model. Without truancy, the R^2 values

decreased to .048 with an adjusted R^2 value of .028. As truancy had little effect on the significance of other variables in the model, truancy was left in the original model.

An effects plot for each of the predictors in the final model and the outcome variable is presented in Figure 1. Examination of the plots further explains the interpretation of the results. One effect in particular, bully frequency and gangs is not intuitive. It would be expected the increase of bullying frequency would be related to the presence of gangs. Rather we see the reverse; the absence of gangs on the school campus indicates a higher rate of bullying, with values closer to 1 being more frequent (daily).

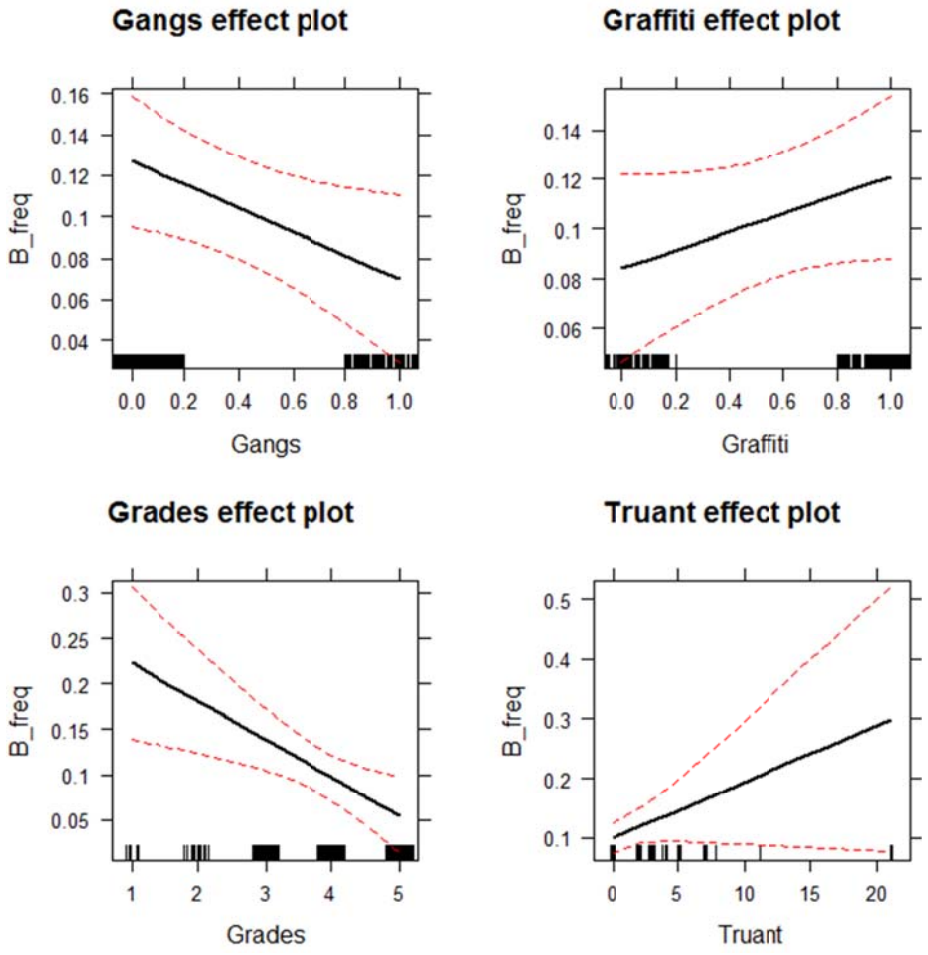

Figure 1. Effect plots for gangs, graffiti, grades, and truancy for general bullying frequency.

Graffiti, poor grades, and increased number of days a student is truant increases the frequency that bullying occurs in the school. Given prior research this is expected.

Cyber Bullying Frequency

The cyber bullying frequency variable was rescaled to a continuous variable. A traditional school year in the U.S. begins in August and ends in May of the following year. Excluding holidays, breaks, and weekends, there are 180 school days in a school year. As the categorical variable for frequency of cyber bullying was created the same way the frequency variable for general bullying was created. Cases which indicated "Don't know" were removed from the analysis. Only those who indicated that they had been cyber bullied were included in this analysis.

A multiple regression analysis was performed with frequency of cyber bullying as the outcome and all perceived school environment variables and all school involvement and engagement variables as independent variables. All the variables were entered in the model simultaneously then removed using backwards elimination, the same procedure that was used for general bullying. The results are presented in Table 14.

Table 14 displays the regression coefficients (B) and intercept, standard error of the coefficients ($SE\ B$), t value for each of the independent variables, standardized coefficients (β), R^2, and adjusted R^2. The regression was significantly different from 0, $F(2, 29) = 11.31$, $p < .001$, with R^2 at .43. The adjusted R^2 value of .399 indicates that nearly 40% of the variability in being frequently cyber bullied is predicted by the number of safety measures present in the school and the number of fights the student has been in. For the two regression coefficients that were significant, 95% confidence intervals (CI)

Table 14

Summary of Final Regression Analysis for All Predictors Predicting Frequency of Cyber Bullying (*n* = 32)

Variable	*B*	*SE B*	*T*	*β*
Intercept	.689**	.21	3.23	
School safety measures	-.107**	.03	-3.15	-.438
Fighting	.061**	.02	3.54	.492

R^2 = .438. adj. R^2 = .399. AIC = 11.14.

*p < .05. **p < .01. ***p < .001.

were calculated. The CI for school safety measures is -0.18 to -0.03, and those for fighting were 0.03 to 0.10.

The size and direction of the relationships of the independent variables on cyber bullying frequency indicate that cyber bulling frequency increases in with fewer school safety measures in place at school and an increase in the number of fights the student has been involved in. An effects plot for each of the predictors in the final model and the outcome variable is presented in Figure 2.

Examination of the plots further aids in the interpretation of the results. From the plots we see that as the number of school safety measures in place at school increase, the frequency of cyber bullying decreases. We also note that as fighting increases so does the frequency of cyber bullying.

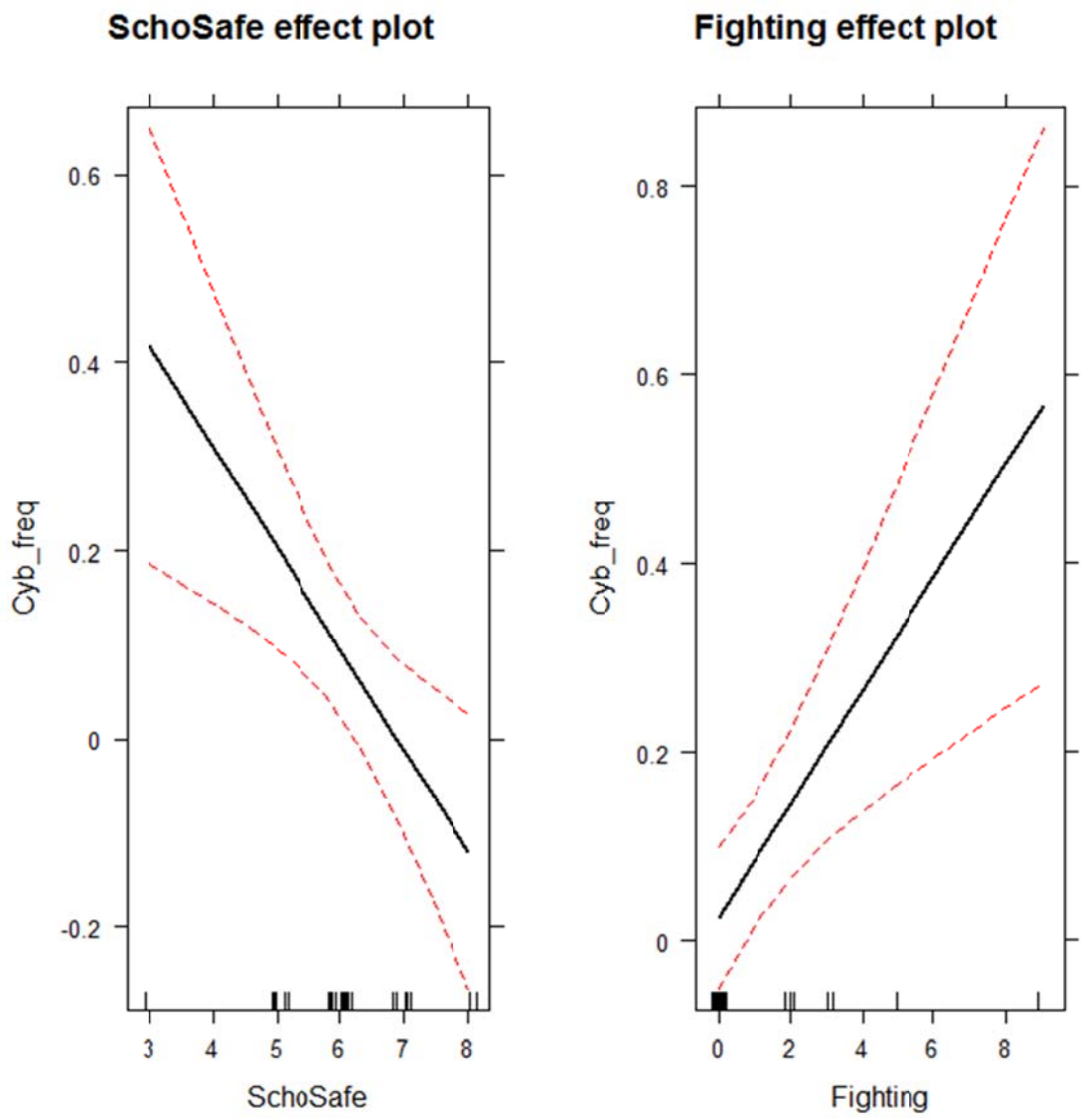

Figure 2. Effect plot of number of perceived number of school safety measures employed by schools on the occurrence of cyber bullying and the number of fights at school on the occurrence of cyber bullying.

CHAPTER V

DISCUSSION

The purpose of this current study was to investigate the extent to which high school males experienced physical, verbal, relational, and cyber bullying and whether the event of an individual experiencing bullying was predicted by school environment variables or individual school involvement and achievement variables. It was hypothesized that a number of school engagement and achievement variables would emerge as predictors of forms of bullying. Also, it was hypothesized that students' perceptions of their school environment would emerge as predictors of the different forms of bullying. In addition, frequency was examined as an outcome to determine if any of the school engagement and achievement variables and perceived school environment variables would predict the frequency of bullying for those who had been bullied.

Examining the models presented in the results section, the variance accounted for by each of the regression models is quite small. The variance is quite small, ranging from 2% to 14% in the logistic regression models and approximately 4% in the general bullying multiple regression model and nearly 40% in the cyber bullying multiple regression model. The lack of variance accounted for by the models may be due to the low proportion of individuals who state that they have been victimized or bullied. Even though there were no statistically significant findings, the practical significance is a noteworthy discussion given the results from the various odds ratios. Practical significance is important as there has been research stating that under-reporting of being

bullied is common. For example, Olweus (1997) determined that underreporting is common because students fear repercussions of reporting and student attitudes change over time for what constitutes bullying. Given this finding, it is important to further discuss practical implications with a lower reporting group.

When exploring verbal bullying, male students are more likely to report being verbally bullied when their grades were low, if they had engaged in fights, if drugs were available at school, and if graffiti was present within the school. Fighting and grades were significant in predicting a student being verbally bullied. Fighting could be a result of being verbally taunted or harassed where the student was trying to defend themselves. Fighting could also be because the student was engaging in bullying behavior and the victim fought back physically. The same could be said of grades, where students may have lower grades because they are being verbally bullied or the verbal bullying is a result of the bully trying to make himself superior, as identified by Olweus (1993), knowing the student is doing poorly academically. Interestingly, extracurricular involvement, truancy, school safety measures, gun presence, and gang presence were not significant although other studies report they were. This may be due to the construction of the survey or the nature of the sample and will be discussed in the limitations.

Examining verbal bullying in the school environment context, results from prior literature suggests that a poor environment proliferates poor behavior. Having drugs available on school grounds as well as graffiti speaks to the nature of the environment of not just the school but also of the community in which that school is located. As had been noted in the review of the literature, drugs and graffiti are commonly found among urban

schools (Fitzpatrick, 1999; Van Dorn, 2004) and it is even more pronounced among low SES communities where these schools are found (Lowry et al., 1999).

Physical bullying was found to have similar findings as verbal bullying in these results. This may suggest that physical and verbal bullying may occur at the same time (Raskauskas & Stoltz, 2007) and possibly that the bully and/or victim may not be silent during the course of an incident. A victim may try to defend themselves if they are being physically assaulted.

Moreover, researchers have examined the different types of bullies and who gets bullied. There is not just a bully and there is not just a victim. Olweus has identified two types of victims, the passive and the provocative victim (Olweus, 1978). The passive victim may not provoke the attack and usually does nothing to defend themselves. On the other hand, the provocative victim may be hot-tempered and will retaliate when attacked.

In addition to what has been said regarding the similarity of predictor variables for verbal and physical bullying, an additional variable appeared for physical bullying, gun presence. A question was asked of the student if they knew or saw someone carrying a gun. What this suggests is for physical bullying, is the school may not be as stringent on detecting guns and possibly the negative school environment is conducive to a student's decision to carry a gun. If the environment is hostile, others (including or excluding the respondent) may feel a need to defend themselves.

Relational aggression in prior literature has primarily identified females as being targets, as well as for verbal bullying (Prinstein, Boergers, & Vernberg, 2001; Wang et

al., 2009). Many findings from previous studies did not show significance of whether males experienced relational aggression and what factors may contribute to that. For this study, identifying bullying in an only male sample may have enabled a more clear examination of variables that were not significant in other studies. In this study, the same three variables which were significant for verbal and physical bullying were also significant for relational bullying; fighting, drug availability and graffiti. What this may suggest is bullying is bullying. These three variables may differ in degree for each of the different forms of bullying but they appear to be consistent.

Looking at the school environment specifically, drug availability and the presence of graffiti are something that the school needs to manage. If drugs and graffiti are present, the school may be a hostile environment to be in. In these types of environments, learning is not maximized, regardless of whether the student is being bullied or not.

Cyber bullying, as with the previous findings (Raskauskas & Stoltz, 2007), show that fighting, grades, drug availability, and graffiti are reliable predictors. However, the question arises with the perceived school environments relation on cyber bullying. Cyber bullying can happen anywhere and is not constrained to school. The case may be that the bullying starts at school and continues through electronic means. Cyber bullying also changes the nature of who the bully is. As discussed in the literature review, due to the distance and sometime anonymous nature of cyber bullying, the bully may not fit the typical definition of who a bully is. Since there is distance involved between the bully and victim, it may be possible that the victim will choose this method to lash out at their bully to redirect the perceived power imbalance. More research is needed to define this

emergent type of cyber bully.

Examining the logistic models for each of the forms of bullying the models were not strong at predicting the form of victimization. This may be due to the nature of how the students responded to the survey. Future research may look at the reliability of the survey to measure what it is intended to measure. Questions that do not improve the reliability of the survey can be removed and replaced with better or improved questions as this is a continuing study.

Some common variables continued to appear as predictors of verbal, physical, relational, and cyber bullying. As mentioned in the literature review, Cook and colleagues (2010) found in a meta-analysis of literature there were stronger predictors for these forms of bullying for bullies, but predictors of being bullied were weaker for victims. The stronger predictors reflect what was found in this research. Fighting, drug availability, and graffiti were found in all three to predict the different forms of bullying whereas school security measures, extracurricular involvement, truancy, and grades were not. However, fighting and drug availability were not statistically significant in this study in predicting frequency of bullying. What can be drawn from this may be the idea that these variables are good at predicting if a person is being bullying but not the frequency of when bullying happens. Frequency then is something that is dependent upon the bully and the frequency of encounters with the victim. It begs the question, does the bully go out of their way to find the victim or is the victim a victim of circumstance (i.e., wrong place at the wrong time) or is something else occurring?

Limitations

Reliability and validity may be problematic in the NCVS-SCS survey. One possible concern with this survey is that many students may not accurately report the frequency in which they were bullied or what occurred when they were bullied (Sawyer, Bradshaw, & O'Brennan, 2008). As the survey is a measure of student perception, there may be a bias in which questions the students are responding to. A problem with all questions in this survey may be the over- or underreporting due to misinterpretation of the question or personal event and the embarrassment that may accompany reporting or forgetting the incident. For instance, examining truancy, the question was stated, "During the last 4 weeks, did you skip any classes?" This question could be interpreted as intentional skipping meaning the student didn't want to go to class or excused skipping meaning the student may have had a doctor's appointment which required them to skip a class. The student may also not want to divulge their truant behavior out of fear of repercussions especially if they are being asked with a parent or guardian present. This may cause artificial inflation (or deflation) of what is actually occurring.

Regarding the validity of the survey instrument, we do not know how items were selected to be included in the survey as there is a lack of documentation (email correspondence, September 3, 2010). Without basing the questions included in the survey on prior research the survey may lack any substantial predictive validity.

A third validity issue is the inability to substantiate the reports of those who have been victimized. We do not know if the individual reporting that they were a victim of bullying are not also continuing the cycle of violence by being or becoming bullies themselves.

A fourth validity issue may be with the selection of variables. As this study looked at only a small part of a larger set of variables provided by the SCS, we can only see a partial picture of bullying at school in the context of school performance and achievement variables as well as perceived school environment variables.

Although the number of school safety measures employed by a school was examined in the analyses, these were individual student reports based upon their perception

A last validity issue of concern is sampling errors. As the sample is taken from those whose household is already enrolled in the NCVS, it is more of a convenience sample. As the SCS is supplemental to the NCVS, it does not utilize the same sampling procedures as those used for selecting households to be included in the NCVS. Respondents to the SCS may not be representative of the rest of the nation.

The questionnaire has had a few changes since its inception. Most of these changes have been additions rather than subtractions. One question to ask is: Why continue to have an item included in the survey when there may be a better way of asking or addressing a question?

An example of how these questions can be improved can be seen in the analyses with frequency of bullying as the outcome. From the previous analyses we can see that these different forms of bullying are occurring but we do not know how often each are occurring. A best-guess estimate would be that verbal, relational, and cyber bullying occur more often than physical bullying as penalties for physically and intentionally hurting someone may be more severe than for calling someone a name. To place the

frequency questions after asking each of the questions about bullying can give us a better idea of what is happening more often in schools and where to focus attention and resources. The attention can be part of faculty instruction to better identify and address these bullying problems when they occur.

Another limitation with the questions included in this survey includes the variable which asked about how many fights the student had been in. Without a preceding definition this finding can be interpreted differently. It may be important to ask if fighting is a type or result of bullying. The student also may not consider the fight to be bullying but just a fight. Fights also differ in intensity. For example, one could ask if the fight was a verbal argument or if it involved physically defending one's self.

Considering the time frame of the survey, most questions ask if something had happened in the past year or past 6 months. We may not be getting an accurate snapshot of who are victims of bullying if only looking at this limited time frame. A potential solution to this might be to perform a longitudinal survey. As the SCS uses a rotating sample, meaning after 3 years the participant is excused from the study, there would be problems with examining previous years as many of the individuals included in previous years may not be included in other years. A more stable and continuous sample would be needed in order to get reliable results should a longitudinal study be carried out.

Finally, concerning the analysis of the frequency of bullying which employed a stepwise regression approach, there is evidence to suggest that the stepwise approach is data driven (Cohen et al., 2002; Tabachnick & Fidell, 2001). This means, that the selection of variables to include in the models was not based upon theory but upon the

series of *F* tests of each model. This can bias the results. Future research should revisit these analyses.

In the end, this study demonstrated weak relationships between having been bullied either verbally, physically, relationally, and through electronic means and risk factors associated with them. However, examining the practical significance,, whether the effect is large or small, it provides a way for school administrators and parents to inquire if the student is being bullied or not.

Practical Implications

The results from this study suggest interventions that target the issues of fighting, drugs, and graffiti may reduce bullying on high school campuses. Perhaps by focusing and combating these issues of fighting, removing drugs from campus, and immediately removing any graffiti can help alleviate the problem of bullying in our school yards. Techniques can be incorporated into the school to teach students better ways of dealing with feelings when tempers flare. For instance, teachers could teach students appropriate management of stressful situations can deter the drive to fight. This type of prevention may help males specifically in knowing how to handle potential physical conflict. Michaud (2009) mentioned that there were two ways to combat bullying. First was to identify the at-risk students and provide them with the proper social and psychological support to help them overcome the effects of being bullied. The second was to not just focus on the victim but also the school. Michaud stated that the problem should not just focus on the students but should involve everyone within the school and surrounding

community. He refers to successful projects such as the Gatehouse project in Melbourne, Australia (Bond et al., 2004) or the "Communities That Care" (CTC) program, which started in Seattle, Washington (Hawkins et al., 2008). These types of programs have been successful in demonstrating the effectiveness of community involvement to combat health issues. Surely the same process can be used to combat school-based bullying and even cyber bullying.

Future Research and Conclusion

State laws are also been found to be varying in their definitions (Furlong et al., 2003). Because of the discrepancy and lack of consensus on the basic definition of bullying, bullying needs to be examined to understand it more fully and to create a greater consensus on its definition. Having a central definition between all governmental and program units may help educators identify what constitutes bullying. Local and national leaders should continue the dialogue of bullying as well as encourage intervention programs that are up to date with the most current research.

Finally, development and refinement of the current NCVS SCS may be warranted to improve understandability and aid proper interpretation of findings whether examined through descriptives or a more complex analysis.

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APPENDIX

NOTICE - We are conducting this survey under the authority of Title 13, United States Code, Section 8. Section 9 of this law requires us to keep all information about you and your household strictly confidential. We may use this information only for statistical purposes. Also, Title 42, Section 3732, United States Code, authorizes the Bureau of Justice Statistics, Department of Justice, to collect information using this survey. Title 42, Sections 3789g and 3735, United States Code also requires us to keep all information about you and your household strictly confidential.

ASK OF ALL PEOPLE AGES 12-18

FORM **SCS-1** U.S. DEPARTMENT OF COMMERCE
Economics and Statistics Administration
U.S. Census Bureau
ACTING AS COLLECTING AGENCY FOR THE
BUREAU OF JUSTICE STATISTICS
U.S. DEPARTMENT OF JUSTICE

SCHOOL CRIME SUPPLEMENT TO THE NATIONAL CRIME VICTIMIZATION SURVEY 2007

We estimate that it will take from 5 to 15 minutes to complete this interview with 10 minutes being the average time. If you have any comments regarding these estimates or any other aspect of this survey, send them to the Associate Director for Finance and Administration, Room 2027, U.S. Census Bureau, Washington DC 20233, or to the Office of Information and Regulatory Affairs, Office of Management and Budget, Washington, DC 20503. According to the Paperwork Reduction Act of 1995, no such persons are required to respond to a collection of information unless such collection displays a valid OMB control number.

Control number
PSU Segment/Suffix Sample Designation/Suffix Serial/Suffix HH No. Spinoff Indicator

A. FR Code
001 ☐☐☐

B. Respondent Line No.
002 ☐☐

Age
003 ☐☐

Name

FIELD REPRESENTATIVE - *Complete an SCS-1 form for all NCVS interviewed people ages 12-18. Do NOT complete an SCS-1 form for Type Z noninterview people or for people in Type A noninterview households.*

C. Type of SCS Interview

004
1 ☐ Personal - Self }
2 ☐ Telephone - Self } ***SKIP*** *to INTRO 1*
3 ☐ Personal - Proxy }
4 ☐ Telephone - Proxy }
5 ☐ Noninterview - *FILL ITEM D*

D. Reason for SCS noninterview

005
2 ☐ Refused
3 ☐ Not available

FIELD REPRESENTATIVE - *Read introduction.*
INTRO 1 - **Now I have some additional questions about your school. These answers will be kept confidential, by law.**

E. SCREEN QUESTIONS FOR SUPPLEMENT

1a. **Did you attend school at any time this school year?**

006
1 ☐ Yes
2 ☐ No - ***SKIP*** to CHECK ITEM D on page 8

1b. **During that time, were you ever home-schooled? That is, did you receive ANY of that schooling at home, rather than in a public or private school?**

092
1 ☐ Yes
2 ☐ No - ***SKIP*** to 2b

1c. **Was all of your schooling this school year home schooling?**

007
1 ☐ Yes - ***SKIP*** to CHECK ITEM D on page 8
2 ☐ No

2a. **During the time you were home-schooled this school year, what grade would you have been in if you were in a public or private school?**

093
0 ☐ Fifth or under - *SKIP to CHECK ITEM D on page 8*
1 ☐ Sixth }
2 ☐ Seventh }
3 ☐ Eighth }
4 ☐ Nineth } ***SKIP*** to
5 ☐ Tenth } INTRO 2
6 ☐ Eleventh }
7 ☐ Twelfth }
8 ☐ Other - *Specify* _____ }
9 ☐ College/GED/Post-graduate/ Other noneligible - ***SKIP*** *to CHECK ITEM D on page 8*

2b. **What grade are you in?**

008
0 ☐ Fifth or under - ***SKIP*** *to CHECK ITEM D on page 8*
1 ☐ Sixth }
2 ☐ Seventh }
3 ☐ Eighth }
4 ☐ Nineth } ***SKIP***
5 ☐ Tenth } to 3
6 ☐ Eleventh }
7 ☐ Twelfth }
8 ☐ Other - *Specify* _____ }
9 ☐ College/GED/Post-graduate/ Other noneligible - **SKIP** to CHECK ITEM D on page 8

E. SCREEN QUESTIONS FOR SUPPLEMENT - Continued

FIELD REPRESENTATIVE - *Read introduction only if any of the boxes 1-8 are marked in item 2a.*
INTRO 2 - **The following questions pertain only to your attendance at a public or private school and not to being home-schooled.**

3. **In what month did your current school year begin?**

009 1 ☐ August
2 ☐ September
3 ☐ Other - *Specify*
_____

F. ENVIRONMENTAL QUESTIONS

6a. **What is the complete name of your school?**

_____
_____
012 ☐☐☐☐☐☐☐☐☐☐☐☐ Office Use Only

6b. **In what city, county, and state is your school located?**

FIELD REPRESENTATIVE - Probe if necessary.

013 _____ City
_____ County
014 ☐☐☐☐☐ Office Use Only
_____ State
015 ☐☐ Office Use Only

7a. **Is your school public or private?**

016 1 ☐ Public - *ASK 7b*
2 ☐ Private - ***SKIP*** to 7c

7b. **Is this the regular school that most of the students in your neighborhood attend?**

017 1 ☐ Yes } SKIP to
2 ☐ No } 8

7c. **Is your school church-related?**

018 1 ☐ Yes
2 ☐ No
3 ☐ Don't know

8. **What grades are taught in your school?**

Pre-K or Kindergarten 00
01
02
03
04
05
06
07
08
09
10
11
12 H.S. Senior
13 Post-graduate
20 All ungraded
30 All Special Education

Grades:

020 ☐☐ (lowest)
TO
021 ☐☐ (highest)

9. **How do you get to school most of the time?**

FIELD REPRESENTATIVE - *If multiple modes are used, code the mode in which the student spends the most time.*

022 1 ☐ Walk
2 ☐ School bus
3 ☐ Public bus, subway, train
4 ☐ Car
5 ☐ Bicycle, motorbike, or motorcycle
6 ☐ Some other way - *Specify*

10. **How long does it take you to get from your home to school most of the time?**

023 1 ☐ Less than 15 minutes
2 ☐ 15-29 minutes
3 ☐ 30-44 minutes
4 ☐ 45-59 minutes
5 ☐ 60 minutes or longer

11. How do you get home from school most of the time? FIELD REPRESENTATIVE - *If multiple modes are used, code the mode in which the student spends the most time.* *If the student volunteers that he or she does not go directly home after school, record the mode that the student uses to get to his or her first destination after school.*	024 1 ☐ Walk 2 ☐ School bus 3 ☐ Public bus, subway, train 4 ☐ Car 5 ☐ Bicycle, motorbike, or motorcycle 6 ☐ Some other way - *Specify* _____
12a. How often do you leave school grounds at lunch time? (*READ CATEGORIES.*) _____	026 1 ☐ **Never** 2 ☐ **Once or twice a year** 3 ☐ **Once or twice a month** 4 ☐ **Once or twice a week** 5 ☐ **Almost every day** _____
12b. Are students in your grade level allowed to leave school grounds to eat lunch?	025 1 ☐ Yes 2 ☐ No 3 ☐ Don't know

13. During this school year, have you participated in any of the following activities sponsored by your school:

		Yes	No
a.	**Athletic teams at school ?**	120 1 ☐	2 ☐
b.	**Spirit groups, for example, Cheerleading, Dance Team, or Pep Club?**	121 1 ☐	2 ☐
c.	**Performing arts, for example, Band, Choir, Orchestra, or Drama ?**	122 1 ☐	2 ☐
d.	**Academic clubs, for example, Debate Team, Honor Society, Spanish Club, or Math Club ?**	123 1 ☐	2 ☐
e.	**Student government?**	124 1 ☐	2 ☐
f.	**[IF GRADES 6, 7, or 8] Community service or volunteer clubs, for example, Peer Mediators, Ecology Club, or Recycling Club?** **[IF GRADES 9, 10, 11, or 12] Community service or volunteer clubs, for example, Peer Mediators, Ecology Club, Key Club, or Interact?**	125 1 ☐	2 ☐
g.	**Other school clubs or school activities,?**	126 1 ☐	2 ☐

14. Does your school take any measures to make sure students are safe?

For example, does the school have:

		Yes	No	Don't know
a.	**Security guards or assigned police officers?**	028 1 ☐	2 ☐	3 ☐
b.	**Other school staff or other adults supervising the hallway?**	029 1 ☐	2 ☐	3 ☐
c.	**Metal detectors?**	030 1 ☐	2 ☐	3 ☐
d.	**Locked entrance or exit doors during the day?**	031 1 ☐	2 ☐	3 ☐
e.	**A requirement that visitors sign in?**	032 1 ☐	2 ☐	3 ☐
f.	**Locker checks?**	033 1 ☐	2 ☐	3 ☐
g.	**A requirement that students wear badges or picture identification?**	094 1 ☐	2 ☐	3 ☐
h.	**One or more security cameras to monitor the school?**	095 1 ☐	2 ☐	3 ☐
i.	**A code of student conduct, that is, a set of written rules or guidelines that the school provides you?**	096 1 ☐	2 ☐	3 ☐

15a.	In your classes, how often are you distracted from doing your schoolwork because other students are misbehaving, for example, talking or fighting? (*READ CATEGORIES.*)	156 1 ☐ Never 2 ☐ Almost never 3 ☐ Sometimes 4 ☐ Most of the time
15b.	How often do teachers punish students during your classes? (*READ CATEGORIES.*)	157 1 ☐ Never 2 ☐ Almost never 3 ☐ Sometimes 4 ☐ Most of the time

16a.	I am going to read a list of statements that could describe a school. Thinking about your school, would you strongly agree, agree, disagree, or strongly disagree with the following	Strongly Agree	Agree	Disagree	Strongly Disagree
	a. Everyone knows what the school rules are. . .	034 1 ☐	2 ☐	3 ☐	4 ☐
	b. The school rules are fair	035 1 ☐	2 ☐	3 ☐	4 ☐
	c. The punishment for breaking school rules is the same no matter who you are	036 1 ☐	2 ☐	3 ☐	4 ☐
	d. The school rules are strictly enforced	037 1 ☐	2 ☐	3 ☐	4 ☐
	e. If a school rule is broken, students know what kind of punishment will follow	038 1 ☐	2 ☐	3 ☐	4 ☐

16b.	Thinking about the TEACHERS at your school, would you strongly agree, agree, disagree, or strongly disagree with the following	Strongly Agree	Agree	Disagree	Strongly Disagree
	a. Teachers treat students with respect.	127 1 ☐	2 ☐	3 ☐	4 ☐
	b. Teachers care about students	128 1 ☐	2 ☐	3 ☐	4 ☐
	c. Teachers do or say things that make students feel bad about themselves	129 1 ☐	2 ☐	3 ☐	4 ☐

16c.	Thinking about all of the ADULTS at your school, would you strongly agree, agree, disagree, or strongly disagree with the following	Strongly Agree	Agree	Disagree	Strongly Disagree
	a. At school, there is an ADULT I can talk to, who cares about my feelings and what happens to me.	130 1 ☐	2 ☐	3 ☐	4 ☐
	b. At school, there is an ADULT who helps me with practical problems, who gives good suggestions and advice about my problems.	131 1 ☐	2 ☐	3 ☐	4 ☐

16d.	Thinking about FRIENDS at your school, would you strongly agree, agree, disagree, or strongly disagree with the following	Strongly Agree	Agree	Disagree	Strongly Disagree
	a. At school, I have a FRIEND I can talk to, who cares about my feelings and what happens to me.	132 1 ☐	2 ☐	3 ☐	4 ☐
	b. At school, I have a FRIEND who helps me with practical problems, who gives good suggestions and advice about my problems.	133 1 ☐	2 ☐	3 ☐	4 ☐

FIELD REPRESENTATIVE - *Read introduction.*

INTRO 3 - **Now I have some questions about things that happen at school. For this survey, "at school" includes the school building, on school property, on a school bus, or going to and from school. Your answers will not be given to anyone.**

17a. **The following question refers to the availability of drugs and alcohol at your school.**

Tell me if you don't know what any of these items are. FIELD REPRESENTATIVE - For "Don't Know" responses, probe if necessary to determine if respondent means they do not know if the drug is available or if they do not know the drug.

FIELD REPRESENTATIVE - *For each item ask,*

Is it possible to get _____ at your school?

		Yes	No	Don't know	Don't know drug
a. Alcoholic beverages	040	1 ☐	2 ☐	3 ☐	4 ☐
b. Marijuana	041	1 ☐	2 ☐	3 ☐	4 ☐
c. Crack	042	1 ☐	2 ☐	3 ☐	4 ☐
d. Other forms of cocaine	043	1 ☐	2 ☐	3 ☐	4 ☐
e. Uppers such as ecstasy, crystal meth or other illegal stimulants	097	1 ☐	2 ☐	3 ☐	4 ☐
f. Downers such as GHB or sleeping pills	098	1 ☐	2 ☐	3 ☐	4 ☐
g. LSD or acid	045	1 ☐	2 ☐	3 ☐	4 ☐
h. PCP or angel dust	046	1 ☐	2 ☐	3 ☐	4 ☐
i. Heroin or smack	047	1 ☐	2 ☐	3 ☐	4 ☐
j. Prescription drugs illegally obtained without a prescription, such as Ritalin or Oxycontin	159	1 ☐	2 ☐	3 ☐	4 ☐
k. Other illegal drugs - *If "Yes" is marked, ASK* **- What drugs?** *(Exclude tobacco products.)*	048	1 ☐	2 ☐	3 ☐	4 ☐

Specify _____

FIELD REPRESENTATIVE - Refer to Drug Slang Card (SCS-2). Reclassify the "other illegal drug(s)" to one of the categories a-i if possible. If able to reclassify the drug(s) mentioned, mark the "No" box in category j, otherwise, mark the "Yes" box in category j and enter the "other illegal drug(s)" mentioned in the Specify space.

17b. **During this school year, did you know for sure that any students were on drugs or alcohol while they were at school?**

101 1 ☐ Yes
2 ☐ No

17c. **During this school year, did anyone offer, or try to sell or give you an illegal drug other than alcohol or tobacco at your school?**

102 1 ☐ Yes
2 ☐ No

G. FIGHTING, BULLYING AND HATE BEHAVIORS

18a. **During this school year, have you been in one or more physical fights at school?**

103 1 ☐ Yes
2 ☐ No - ***SKIP*** to 19a

18b. **During this school year, how many times have you been in a physical fight at school?**

104 ☐☐☐ (Number of times)

19a. **Now I have some questions about what students do at school that make you feel bad or are hurtful to you. We often refer to this as being bullied. You may include events you told me about already. During this school year, has any student bullied you?**

That is, has another student...

(Read each category a-g.)

		Yes	No
a. **Made fun of you, called you names, or insulted you?**	134	1 ☐	2 ☐
b. **Spread rumors about you?**	135	1 ☐	2 ☐
c. **Threatened you with harm?**	136	1 ☐	2 ☐
d. **Pushed you, shoved you, tripped you, or spit on you?**	137	1 ☐	2 ☐
e. **Tried to make you do things you did not want to do, for example, give them money or other things?**	138	1 ☐	2 ☐
f. **Excluded you from activities on purpose?**	139	1 ☐	2 ☐
g. **Destroyed your property on purpose?**	140	1 ☐	2 ☐

Check Item 19a Are all categories a-g marked "No" in Q19a above?

1 ☐ Yes - SKIP to 20a
2 ☐ No - SKIP to 19b

19b.	**During this school year, how often did (this/these things) happen to you?** *(Read categories 1-4.)*	142 1 ☐ **Once or twice this school year** 2 ☐ **Once or twice a month** 3 ☐ **Once or twice a week, or** 4 ☐ **Almost every day** 5 ☐ Don't know
19c.	**Did (this event/these events) occur** *(Read categories.)* *Mark (X) all that apply.*	143 1 ☐ **In the school building (for example in a classroom, hallway, or gymnasium)?** 144 2 ☐ **Outside on school grounds?** 145 3 ☐ **On a school bus?** 146 4 ☐ **Somewhere else?** - *Specify* _____
19d.	**Was a teacher or some other adult at school notified about (this event/any of these events)?**	147 1 ☐ Yes 2 ☐ No
CHECK Item B	**Is Box 4 in Question 19a marked?**	160 1 ☐ Yes - Ask 19e 2 ☐ No - Skip to 20a
19e.	**What were the injuries you suffered as a result of being pushed, shoved, tripped, or spit on?** *Mark (X) all that apply.*	148 1 ☐ None 149 2 ☐ Bruises or swelling 150 3 ☐ Cuts, scratches, or scrapes 151 4 ☐ Black eye/bloody nose 152 5 ☐ Teeth chipped or knocked out 153 6 ☐ Broken bones/internal injuries 154 7 ☐ Knocked unconscious 155 8 ☐ Other - *Specify* _____
20a.	**Now I have some questions about what students do that could occur *anywhere* and that make you feel bad or are hurtful to you. You may include events you told me about already.** **During this school year, has another student....** (Read each category a-c.) **a. Posted hurtful information about you on the Internet?** **b. Made unwanted contact, for example, threatened or insulted you via instant messaging?** **c. Made unwanted contact, for example, threatened or insulted you via text (SMS) messaging?**	Yes / No 161 1 ☐ / 2 ☐ 162 1 ☐ / 2 ☐ 163 1 ☐ / 2 ☐
Check Item 20a	**Are all categories a-c marked "No" in Q20a above?**	1 ☐ Yes - SKIP to 21a 2 ☐ No - SKIP to 20b
20b.	**During this school year, how often did (this/these things) happen to you?** ***(Read categories 1-4.)***	165 1 ☐ **Once or twice this school year** 2 ☐ **Once or twice a month** 3 ☐ **Once or twice a week, or** 4 ☐ **Almost every day** 5 ☐ Don't know
20c.	**Was a teacher or some other adult *at school* notified about (this event/any of these events)?**	166 1 ☐ Yes 2 ☐ No
21a.	**During this school year, has anyone called you an insulting or bad name at school having to do with your race, religion, ethnic background or national origin, disability, gender, or sexual orientation? We call these hate-related words.**	065 1 ☐ Yes 2 ☐ No - ***SKIP*** to 22
21b.	**Were any of the hate-related words related to ...** **a. Your race?** ..... **b. Your religion?** ..... **c. Your ethnic background or national origin (for example, people of Hispanic origin)?** ..... **d. Any disability (by this I mean physical, mental, or developmental disabilities) you may have?** . **e. Your gender?**..... **f. Your sexual orientation?** ..... If "Yes," SAY - **(by this we mean homosexual, bisexual, or heterosexual**)	Yes / No / Don't know 107 1 ☐ / 2 ☐ / 3 ☐ 108 1 ☐ / 2 ☐ / 3 ☐ 109 1 ☐ / 2 ☐ / 3 ☐ 110 1 ☐ / 2 ☐ / 3 ☐ 111 1 ☐ / 2 ☐ / 3 ☐ 112 1 ☐ / 2 ☐ / 3 ☐

22.	During this school year, have you seen any hate-related words or symbols written in school classrooms, school bathrooms, school hallways, or on the outside of your school building?	066 1 ☐ Yes 2 ☐ No
	H. AVOIDANCE	
23a.	During this school year, did you STAY AWAY from any of the following places because you thought someone might attack or harm you there? *(READ CATEGORIES.)*	Yes / No
	a. The shortest route to school?	068 1 ☐ 2 ☐
	b. The entrance into the school?	069 1 ☐ 2 ☐
	c. Any hallways or stairs in school?	070 1 ☐ 2 ☐
	d. Parts of the school cafeteria?	071 1 ☐ 2 ☐
	e. Any school restrooms?	072 1 ☐ 2 ☐
	f. Other places inside the school building?	073 1 ☐ 2 ☐
	g. School parking lot?	074 1 ☐ 2 ☐
	h. Other places on school grounds?	167 1 ☐ 2 ☐
		075 1 ☐ 2 ☐
23b.	Did you AVOID any activities at your school because you thought someone might attack or harm you?	076 1 ☐ Yes 2 ☐ No
23c.	Did you AVOID any classes because you thought someone might attack or harm you?	077 1 ☐ Yes 2 ☐ No
23d.	Did you stay home from school because you thought someone might attack or harm you in the school building, on school property, on a school bus, or going to or from school?	078 1 ☐ Yes 2 ☐ No
	I. FEAR	
24.	How often are you afraid that someone will attack or harm you in the school building or on school property? *(READ CATEGORIES.)*	079 1 ☐ Never 2 ☐ Almost never 3 ☐ Sometimes 4 ☐ Most of the time
25.	How often are you afraid that someone will attack or harm you on a school bus or on the way to and from school? *(READ CATEGORIES.)*	080 1 ☐ Never 2 ☐ Almost never 3 ☐ Sometimes 4 ☐ Most of the time
26.	Besides the times you are in the school building, on school property, on a school bus, or going to or from school, how often are you afraid that someone will attack or harm you? *(READ CATEGORIES.)*	081 1 ☐ Never 2 ☐ Almost never 3 ☐ Sometimes 4 ☐ Most of the time
	J. WEAPONS	
27.	Some people bring guns, knives, or objects that can be used as weapons to school for protection. During this school year, did YOU ever bring the following to school or onto school grounds? *(READ CATEGORIES.)*	Yes / No
	a. A gun?	082 1 ☐ 2 ☐
	b. A knife brought as a weapon?	083 1 ☐ 2 ☐
	c. Some other weapon?	084 1 ☐ 2 ☐

28a.	**Do you know any (other) students who have brought a gun to your school during this school year?**	085 1 ☐ Yes 2 ☐ No
28b.	**Have you actually seen another student with a gun at school during this school year?**	086 1 ☐ Yes 2 ☐ No 3 ☐ Don't know
29.	**During this school year, could you have gotten a loaded gun without adult supervision, either at school or away from school?**	113 1 ☐ Yes 2 ☐ No

K. GANGS

FIELD REPRESENTATIVE - *Read introduction.*

INTRO 4 - **Now, we'd like to know about gangs at your school. You may know these as street gangs, fighting gangs, crews, or something else. Gangs may use common names, signs, symbols, or colors. For this survey, we are interested in all gangs, whether or not they are involved in violent or illegal activity.**

30.	**Are there any gangs at your school?**	058 1 ☐ Yes 2 ☐ No - ***SKIP to 33a*** 3 ☐ Don't know
31.	**During this school year, how often have gangs been involved in fights, attacks, or other violence at your school?** (*READ CATEGORIES 1-5.*)	089 1 ☐ **Never** 2 ☐ **Once or twice this school year** 3 ☐ **Once or twice a month** 4 ☐ **Once or twice a week, or** 5 ☐ **Almost every day** 6 ☐ Don't know
32.	**Have gangs been involved in the sale of drugs at your school during this school year?**	090 1 ☐ Yes 2 ☐ No 3 ☐ Don't know

L. STUDENT CHARACTERISTICS

33a.	**During the last 4 weeks, did you skip any classes?**	114 1 ☐ Yes 2 ☐ No - ***SKIP*** to 34 3 ☐ Don't know - ***SKIP*** to 34
33b.	**During the last 4 weeks, on how many days did you skip at least one class?**	115 ☐☐ (Number of days)
34.	**During this school year, across all subjects have you gotten mostly -** (*READ CATEGORIES 1-5.*)	116 1 ☐ **A's** 2 ☐ **B's** 3 ☐ **C's** 4 ☐ **D's** 5 ☐ **F's** 6 ☐ School does not give grades/no alphabetic grade equivalent
35.	**Thinking about the future, do you think you will ...**	Yes / No / Don't know
	a. Attend school after high school?	117 1 ☐ / 2 ☐- **SKIP** to CHECK ITEM C / 3 ☐
	b. Graduate from a 4-year college?	118 1 ☐ / 2 ☐ / 3 ☐
CHECK ITEM C	Were the supplement questions asked in private, or was an adult member of the household or family present during at least part of the questions? *If not sure or if a telephone interview, ask -* **Was an adult member of the household or family present during at least part of these questions?**	091 1 ☐ **Personal interview** - No adult present 2 ☐ **Personal interview** - Adult present 3 ☐ **Telephone interview** - No adult present 4 ☐ **Telephone interview** - Adult present 5 ☐ **Telephone interview** - Don't know
CHECK ITEM D	Is this the last household member to be interviewed?	119 ☐ Yes - END SUPPLEMENT ☐ No - Interview next household member

NOTES